

County Borough



of Blackburn.

Annual Report

UPON THE

Health of Blackburn

For the Year 1908,

BY

**Alfred Greenwood, M.D., B.Sc.,
D.P.H., etc.**

Medical Officer of Health, Medical Superintendent to the Infectious
Diseases Hospitals and Medical Officer to the Education Committee.

Blackburn :

The "Times" Printing Works, Northgate.



Corporation of Blackburn.

Members of the Health Committee.

THE MAYOR (Alderman F. T. Thomas).

ALDERMEN :

GARSDEN (Chairman).	WATSON.
NEWTON.	RAMSAY.

COUNCILLORS :

GREEVES (Vice-Chairman).	FIELDING.
BOLTON.	MARTIN.
DEWHURST.	HIGHTON.
JOHNSON.	HIGHAM.
HEATLEY.	RAMSBOTTOM.
M. SHORROCK.	WAREING.
TAYLOR.	BECKETT.
MARSDEN.	BROWNLEE.



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The Local Government Board Tables, the Classification of all Deaths in the Borough, and Table showing Weight of Children attending the Nursing Mothers' Aid Society, are appended to this Report.

Statistical Summary for 1908.

Area of Borough	7,431 acres
Population at Census, 1901	127,626
Estimated Population to middle of 1908	135,278
Average Number of Persons per acre	18.2
Birth-Rate per 1,000 living	25.2
Death-Rate ,, 	15.9
,, from Zymotic Diseases	1.7
Infant Mortality per 1,000 Births	149.3
Total Occupied Houses at 1901 Census	27,756
Plans of New Buildings Passed	417
Rateable Value	£542.072

PUBLIC HEALTH OFFICE,

BLACKBURN,

January 2nd, 1909.

*To the Chairman and Members of the Health Committee of
the County Borough of Blackburn.*

Mr. Chairman and Gentlemen,

I have the honour to submit to you, in accordance with the regulations of the Local Government Board, my seventh Annual Report on the Health and Sanitary Condition of the Borough for the year ending December 31st, 1908.

The Report contains the Birth and Death Statistics, the measures adopted for the prevention of disease, and the work carried out by this Department.

I thank you for the encouragement and support which you have always given to me.

I am, Mr. Chairman and Gentlemen,

Your obedient servant,

ALFRED GREENWOOD.

A.

REPORT

OF THE

Medical Officer of Health

FOR 1908.

Blackburn is situated chiefly in the valley of the Blakewater, and to a much smaller extent in the valley of the Darwen.

The following are the heights above sea-level in various parts of the town :—

Town Hall	377 feet.
Revidge	715 „
Witton	318 „
Intack	483 „
Infirmery	402 „
Station	360 „
Fever Hospital	560 „

The rivers join on the western boundary of the Borough. On the north side of the Blakewater the land rises after the first few hundred yards rapidly from a height of about 300 feet to a height of 700 feet. To the south and west of the River Darwen there is also a fairly rapid rise from a height of 300 feet to 600 feet. The land between the two rivers has at first no great inclination, but towards the south-east it rises rapidly to a height of 650 feet. On the north side the gradients are as high in one or two instances as 1 in 7, and 1 in 10 or 12 are not uncommon. On the south side the steepest slope is 1 in 10. The fall of the

valley of the Blakewater is 86 feet in $2\frac{1}{4}$ miles or 1 in 138. With few exceptions the falls in the town may be considered good. The deep strata underlying the town are principally the Lower Coal Measures or Gannister Beds. There is a narrow strip of Alluvium in the valley of the Darwen, and Millstone Grit (rock and shale) comes to the surface on the northern side of the Borough over a considerable area, and to a very small extent on the southern side. The Gannister Beds underlie nearly the whole of the town proper, and those parts which have Millstone Grit for their deep strata are chiefly agricultural land. With one or two small exceptions the deep strata are covered with drift beds. Throughout the greater part of the Borough the drift beds are principally composed of clay. There is, however, a considerable piece of land in the centre of the town covered with a good depth of pure sand. I cannot map it out correctly, but it includes the land on which the Town Hall, the Market House, the Parish Church, and the Railway Station are built. It extends northwards as far as Regent Street and Richmond Terrace. To the west it extends as a narrow elongated strip as far as Witton Stocks.

This district can be understood better by referring to the Enumeration District Map.* The districts which have sandy subsoil are Nos. 5, 6, 41, 42 in the Southern Division, Nos. 19, 32, 33, 34 in the Northern Division, and No. 2, in the Witton and Livesey Division; and besides these Nos. 43, 44, 45 in the Southern Division, Nos. 28, 31 in the Northern Division, and Nos. 3, 4, and 6 in the Witton and Livesey Division, are partly sand and partly clay. The sand varies considerably in its purity in different localities. In the neighbourhood of Church Street, Mincing Lane, Weir Street, Clayton Street, and King Street it is of a clean reddish colour, and reaches, in some instances, to a depth of 15 to 20 feet, or possibly more. In the neighbourhood of Galligreaves Street and between Galligreaves Street and Whalley Banks, the sand was originally overlaid with a varying thickness of clay, but this was mostly removed before the land

* This Map has been remodelled in accordance with the 1901 Census results—including the added area—and will be found at the end of the Report.

was built upon. To the south of Bank Top and Redlam the subsoil is composed mostly of a mixture of sand, gravel, and clay, whilst to the north of Bank Top and Redlam, as far as the River Blakewater, the subsoil is much purer sand. Over the remainder of the town the drift beds are mostly clay, or clay and gravel.

Millstone Grit comes to the surface along Revidge Road, and to some extent on both sides of the road, but principally to the south. The deep strata are of interest chiefly from the water which is derived from them. The superficial strata or drift beds which form the subsoil are of great importance. Upon its character the dryness of the locality depends to a great extent, and frequently the dryness of the houses built upon it. It has also a very distinct bearing upon all diseases, which are due to soil pollution, and also upon those diseases which are due to damp and cold.

POPULATION.

The population has been calculated upon the assumption that it has grown at the same rate proportionately since the census of 1901. This method of calculation produces the figure 135,278, as being the estimated population to the middle of 1908.

As I have pointed out before, it is very desirable that this figure should be as accurate as possible, because upon it, are calculated the various death-rates, etc.

It is now over seven years since the last census, and some inaccuracy of statistics will occur if the population should be estimated erroneously. Such a difficulty would be met to a great extent by the institution of a Quinquennial Census.

The above figure, 135,278, however, may be checked by two other methods of estimating the population, namely, by ascertaining the natural increase or excess of births over deaths

to the middle of 1908. The population of Blackburn estimated in this way is 137,196. This figure, however, is affected by emigration and immigration.

The third method of estimating the population is that formed by multiplying the occupied houses (29,818) by the average number of occupants of each house (4.6) according to the last census. This method of calculation gives the figures 137,162.

I have preferred, however, to retain the first figure (135,278) in order that the rates of 1908 may be compared with the rates of the previous years since the last census in 1901, which have been calculated by the same method.

TABLE I.

YEAR.	Population at Census.	BIRTHS.	DEATHS.	Natural Increase in 10 year periods, also expressed as percentage of population.	Excess of Immigration over Emigration in 10 year periods, also expressed as a percentage of population.	Total Increase in 10 year periods, also expressed as a percent- age of the population.
1841	36,629		955			
1842			945			
1843			1220			
1844			1143			
1845			1124			
1846			1488			
1847			1445			
1848			1214			
1849			1125			
1850			1315			
1851	46,536	2035	1264			
1852		2000	1697			
1853		2130	1758			
1854		2241	1320			
1855		2181	1781	6859	9731	16590
1856		2324	1330	14.7 %	20.9 %	35.6 %
1857		2372	1824			
1858		2277	1847			
1859		2479	1547			
1860		2675	1487			
1861	63,126	2773	1774			
1862		2754	1815			
1863		2568	1440			
1864		2730	1746			
1865		2737	1881	9211	4002	13213
1866		2775	2146	14.5 %	6.3 %	20.9 %
1867		2915	1867			
1868		3155	1961			
1869		3007	2337			
1870		3082	2318			
1871	76,339	3166	2033			
1872		3463	2050			

TABLE I—Continued.

YEAR.	Population at Census.	BIRTHS.	DEATHS.	Natural Increase in 10 year periods, also expressed as percentage of population.	Excess of Immigration over Emigration in 10 year periods, also expressed as a percentage of population.	Total Increase in 10 year periods, also expressed as a percent- age of the population.
1873		3227	2462			
1874		3305	2432			
1875		3412	2200			
1876		3425	2435	10820	16855	27675*
1877		3518	2134	14.1 %	less	less
1878		3456	2742		12056 =	12056 =
1879		3418	2174		4799 or	15619 or
1880		3386	2294		6.2 %	20.4 %
1881	104,014	3919	2431			
1882		3918	2665			
1883		4305	2660			
1884		4132	2663			
1885		4000	2452			
1886		4004	2863	13186	2864	16050
1887		4164	2974	12.6 %	2.7 %	15.4 %
1888		4111	2865			
1889		4150	3077			
1890		4015	2882			
1891	120,064	4085	3116			
1892		3883	2551			
1893		3822	2793			
1894		3621	2173			
1895		3899	3084	10853	-3291	7562
1896		3552	2269	9.04 %	-2.7%	6.3%
1897		3629	2529			
1898		3662	2439			
1899		3643	2607			
1900		3438	2820			
1901	127,626	3386	2495			
1902		3357	2247			
1903		3304	2069			
1904		3100	2274			
1905		3193	2183			
1906		3418	2193			
1907		3348	2293			
1908		3415	2157			

* The population of the added portions of Witton, Livesey, Lower Darwen and Little Harwood are here deducted.

Between 1871 and 1881 the following additions were made to the Borough. In July, 1877: Livesey (part of) 4449; Witton (part of) 4180; Little Harwood (part of) 33. In July, 1879, Lower Darwen (part of) 2712; Little Harwood (part of) 682.

In November, 1901, parts of Witton and Livesey were added to the Borough.

TABLE II.

Age Periods.	Population estimated to the middle of 1908.	
	M	F
Under 5	6275	6148
5 — 15	12469	13671
15 — 25	12911	15831
25 — 35	9865	12563
35 — 45	8746	10751
45 — 55	6187	7040
55 — 65	3568	4462
65 — 75	1537	2198
75 and upwards	411	645
Total.....	61969	73309

MARRIAGES.

The number of Marriages solemnised within the Borough of Blackburn during 1908 was 1,204, compared with 1,305 during 1907.

Of these, 654 took place in the Established Churches and 548 in Nonconformist places of worship, and at the Register Office, and two in the Jewish Synagogue.

The annual rate of persons married per 1,000 of the population was 17.8 during 1908.

The Marriage Rates for the five previous years were as follows :—

1903	.....	16.1
1904	.....	17.7
1905	.....	19.4
1906	.....	19.1
1907	.....	19.4

The lowered marriage rate appears to correspond with the bad state of the cotton industry of this town, as an increased marriage rate seems to accompany a prosperous condition of the trade.

BIRTHS.

The number of Births registered during the year in Blackburn was 3,415, of which 1,773 were males and 1,642 females, equal to a birth-rate of 25.2 per 1,000 living.

The birth-rate for 1907 was 24.9 per 1,000.

The birth-rates per 1,000 living during 1908, for England and Wales, were as follows :—

England and Wales	.....	26.5
76 Great Towns	.....	27.0
142 Smaller Towns	.....	26.0
England and Wales (less the 218 Towns)	.....	26.2

It will therefore be seen that the 1908 birth-rate for Blackburn was 1.8 per 1,000 less than the average birth-rate for the 76 large towns of England and Wales.

Also a reference to Table XI. will show that only 8 of the 33 large towns named in that table had a lower birth-rate than Blackburn during the year 1908.

ILLEGITIMATE BIRTHS.

Of the 3,415 Births, 153 were illegitimate, which is equal to a percentage of 4.4.

Similar percentages for the years 1905, 1906, and 1907 were 3.8, 3.9, and 3.8 respectively.

During the year, inquiries have again been made respecting these illegitimate births.

Of the 153 illegitimate births, 71 were males and 82 were females.

Twenty-three of these births occurred in the Union Work-house.

On four occasions, twins were born.

The following is a summary of the results of these visits which contains some very interesting information.

As to the occupation of parents, the following information was obtained :—

MOTHERS.

Weavers	57	Pedlar	1
Winders	19	Explosive Cartridge- Case Maker	1
Servants	14	Tailoress	1
Cotton Rovers	14	Dressmaker	1
Ring Spinners	10	Shop Assistant	1
Charwomen	7	Firelight Maker	1
Housekeepers	7	Fancy Card Maker ...	1
Cardroom Hands	4	Stocking Knitter	1
Slubbers	2	Confectioner	1
Restaurant Waitresses	2	Lodging-house Keeper	1
Cotton Drawers	2	Rag-sorter	1
Warpers	2		
Cooks	2		

FATHERS.

Labourers	25	Fish Hawker	1
Weavers	20	Blacksmith	1
Foundrymen	5	Shop Assistant	1
Spinners	5	Waller	1
Carters	4	Heald Varnisher	1
Bricksetters	3	Photographer	1
Colliers	3	Engineer	1
Soldiers	2	Bobbin Carrier	1
Bookbinders	2	Bobbin Turner	1
Mechanics	2	Cycle Maker	1
Painters	2	Joiner	1
Wheelwrights	2	Clerk	1
Postmen	2	Pointsman	1
Butchers	2	Farmer	1
Printers	2	Rag-sorter	1
Plumbers	2	Gardener	1
Ironbroker	1	Coachman	1
Boilermaker	1	Fisherman	1
Canal Boatman	1	Barman	1
Pedlar	1	Fruit Salesman... ..	1
Quack Doctor	1	Overlooker	1
Tripe Dresser	1	Farm Labourer	1
Shoemaker	1	Carman	1
Baker	1	Insurance Agent	1
Pawnbroker	1	Not Ascertained	35

As to the method of feeding these illegitimate children, it was found that—

49	were fed on the breast.
22	„ with boat-shaped bottle.
15	„ „ long-tube bottle.
7	„ „ breast and long-tube bottle.
6	„ „ breast and boat-shaped bottle.
6	„ „ hygienic bottle.
3	„ „ spoon.
2	„ „ breast and spoon.

The nature of foods used in the above was as follows :—

30	were	fed	on	milk	and	water.
6	„	„		Neave's	Food.	
4	„	„		bread	and	milk.
4	„	„		prepared	barley.	
2	„	„		Nestle's	Milk.	
1	was	fed	on	barley	water.	
1	„	„		Frame's	Food.	

Respecting the place of nursing the above-mentioned infants, the following particulars were obtained :—

82	were	nursed	at	home.
27	„	„		away from home.
13	„			dead.
5				had removed.

As to the condition of the houses where these births occurred, it was found that—

80	were	clean.
25	„	dirty.

TABLE III.—ILLEGITIMATE CHILDREN.

Ward.	No. of Births.	Total number of deaths at all ages	Deaths under 1 year of age.
St. Stephen's	8	4	3
Trinity.....	8	3	2
St. Michael's.....	3	5	3
St. John's	6	5	5
St. Silas'.....	5	1	1
St. Paul's	10	4	4
St. Peter's	17	10	7
St. Mary's	25	5	5
St. Matthew's	13	4	3
St. Thomas' *.....	33	10	9
Park.....	5	3	2
St. Luke's	8	...	...
St. Mark's	6	3	2
St. Andrew's	6	3	2
Borough	153	60	48

* The Workhouse is situate in this Ward.

The percentage of deaths of illegitimate children under one year of age to the total number of illegitimate births registered during the year was 31·3. This is greater by 5·6 per cent. than in 1907.

STILLBORN CHILDREN.

The following are the number of stillborn children brought to the Cemetery and reported to me by the Registrar during the year 1908 :—

Jan.	Feb.	March	April	May	June
25	13	18	9	22	16
July	Aug.	Sept.	Oct.	Nov.	Dec.
18	13	14	10	19	18

Total. 185.

Visits were also paid by the Lady Inspectors to these houses, and the cause of the still-birth in 33 instances was ascribed by the mother to falls and undue exertion. and to ill-health or abnormal conditions in 43 instances.

DEATHS.

In the following Tables (V. to XIII.) will be found classifications of the deaths in Blackburn during 1908, according to age, disease, locality, period, and also comparisons with other towns.

During 1908, there were 2,157 deaths, of which 1,097 were males and 1,060 females.

Adjustment has been made for those persons who belonged to outside districts and who died in Blackburn, and for Blackburn residents who died in outside districts.

The number of non-residents who died in institutions in this Borough was 120, compared with 104 such deaths during 1907.

These came from the following districts, viz:—Darwen, 56; Oswaldtwistle, 12; Clayton-le-Moors, 7; Great Harwood, 6; Rishton, 5; Accrington, 4; Haslingden, 3; Mellor, 2; Clitheroe, 2; Cherry Tree, 2; Tockholes, 2; Preston, 2; Bradford, 2; and Church, Withnell, Blackpool, Chorley, Burnley, Southport, Feniscowles, Billington, Livesey, Mellor Brook, Yate and Pickup Bank, Brierfield, Ramsbottom, Stafford, and St. Bees, one each.

The number of deaths amongst Blackburn residents occurring in districts outside was 41, compared with 45 during 1907.

These deaths occurred at Culcheth Hall (Manchester), St. Mary's Hospital (Manchester), Royal Infirmary (Manchester), Hospital for Women (Liverpool), Victoria Hospital (Accrington), Lancaster Asylum, Whittingham Asylum, Prestwich Asylum, Winwick Asylum, Rainhill Asylum, Private Residence (Padiham), and Private Residences (Blackpool).

Notifications of Deaths in Blackburn, occurring amongst residents of other districts are sent quarterly to the Medical Officers of Health of those districts, in order to facilitate accuracy of death statistics.

The resulting death-rate is equal to 15.9 per 1,000, which is a very satisfactory rate. Only on one previous occasion (in 1903, namely 15.7 per 1,000) has the annual death-rate of Blackburn been lower.

Moreover, this 1908 death-rate is 2.2 per 1,000 lower than the average death-rate of Blackburn for the ten years 1898 to 1907, which indicates a considerable saving of lives.

The following are the corrected death-rates per 1,000 living for England and Wales during 1908:—

England and Wales	14.7
76 Great Towns	15.8
142 Smaller Towns	14.7
England and Wales (less the 218 Towns)	13.8

The decrease in the number of Deaths for 1908, as compared with 1907, was in the following diseases:—Pneumonia, Bronchitis, Diseases of the Heart and Blood-vessels, Measles, Whooping Cough, Old Age, Influenza, Abdominal Tuberculosis, Rheumatism, Cancer, Premature Birth, Burns and Scalds, and Causes Unspecified.

The decrease was especially marked in Pneumonia, Bronchitis, and Diseases of the Heart and Blood-vessels.

The increase in the number of Deaths for 1908, as compared with 1907, was in the following diseases:—Diarrhœa, Phthisis and General Tuberculosis, Debility, and Apoplexy.

The number of deaths in the following diseases remained about the same during 1908 as during 1907:—Scarlet Fever, Diphtheria and Croup (taken together), Enteric Fever, Tubercular Meningitis and Meningitis (taken together), other forms of Tuberculosis, and Cirrhosis of the Liver.

The largest numbers of Deaths at all ages during 1908 were from Bronchitis, Pneumonia, Diseases of the Heart and Blood-vessels, Diarrhœa, and Phthisis, which claimed 224, 178, 173, 152, and 148 victims respectively.

On referring to Table X. it will be seen that during 1908 the lowest death-rates occurred in St. Silas's, St. Thomas's, St. Mark's, and St. Andrew's Wards, with rates of 10.6, 11.9, 13.7, and 13.7 per 1,000 respectively.

The highest Ward death-rates occurred in St. Peter's, St. Mary's, and St. Luke's Wards, namely :—25.3, 24.7, and 18.0 per 1,000 respectively. A similar state of affairs prevailed during 1907.

Reference to Table X. will show that during 1908 the Birth-rate and the Death-rate in St. Peter's Ward were the same. It is remarkable that this equality occurred in that Ward during 1907.

Again, as in previous years, Table X. also shows the striking difference in the death-rates from Phthisis in the various Wards.

The Wards with a Phthisis death-rate under one per 1,000 were St. Silas's, St. John's, St. Stephen's, St. Thomas's, St. Mark's, St. Michael's, St. Andrew's, and St. Paul's Wards.

Those with a Phthisis death-rate above one per 1,000 were St. Peter's, St. Mary's, Trinity, Park, and St. Matthew's Wards.

St. Luke's Ward had a Phthisis death-rate of 1 per 1,000.

Table V. shows that the lowest death-rate occurred between the ages of five and fifteen years, and that the death-rates were greatest at the extremes of life.

From Table VI. it will be seen that the highest monthly death-rates occurred during February and December, and that the increases were due chiefly to Lung Diseases.

There was also an increase in the monthly death-rates during September and October which was due mainly to Epidemic Diarrhœa.

The highest weekly death-rate, as shown in Table IX., occurred in the week ending February 29th, when it was 24.2 per 1,000.

The lowest weekly death-rate occurred in the week ending August 1st, when it was 7.6 per 1,000.

TABLE IV.

Year.	Popu- lation in Census Years.	Popula- tion esti- mated to middle of year.	Birth Rate.	Death Rate.	Average Death rate in 10 year periods.	Year.	Popula- tion in Census Years.	Popula- tion esti- mated to middle of year.	Birth Rate.	Death Rate.	Average death rate in 10 year periods.
1841	36,629	36,849		29'9	29'02	1871	76,339	76,695	41'1	26'5	26'5
1842	...	37,742		25'0		1872	...	78,136	44'3	26'2	
1843	...	38,656		31'5		1873	...	79,604	40'5	30'9	
1844	...	39,593		28'8		1874	...	81,099	40'7	29'9	
1845	...	40,552		27'7		1875	...	82,624	41'2	26'6	
1846	...	41,534		35'7		1876	...	84,716	40'4	28'7	
1847	...	42,541		33'9		*1877	...	90,089	39'0	23'6	
1848	...	43,571		27'8		1878	...	96,031	35'9	28'5	
1849	...	44,627		25'2		†1879	...	98,869	35'5	21'9	
1850	...	45,708		28'7		1880	...	102,716	32'9	22'2	
1851	46,536	46,892	43'3	27'0	29'47	1881	104,014	104,388	37'5	22'4	23'83
1852	...	48,344	41'3	35'1		1882	...	105,897	36'9	24'3	
1853	...	49,841	42'7	35'2		1883	...	107,427	40'0	23'9	
1854	...	51,384	43'6	25'6		1884	...	108,980	37'9	23'6	
1855	...	52,974	41'7	33'6		1885	...	110,555	36'1	21'3	
1856	...	54,614	42'5	24'3		1886	...	112,153	35'6	24'7	
1857	...	56,306	42'1	32'2		1887	...	113,774	36'5	25'3	
1858	...	58,049	39'2	31'8		1888	...	115,418	35'6	24'0	
1859	...	59,846	41'4	25'8		1889	...	117,086	35'5	25'4	
1860	...	61,699	42'3	24'1		1890	...	118,780	33'8	23'4	
1861	63,126	63,434	43'7	27'9	27'83	1891	120,064	120,245	33'9	25'9	21'32
1862	...	64,681	42'5	28'1		1892	...	120,972	32'0	21'0	
1863	...	65,953	38'9	21'8		1893	...	121,704	31'4	22'9	
1864	...	67,249	40'5	25'9		1894	...	122,440	29'5	17'7	
1865	...	68,572	39'9	27'4		1895	...	123,181	31'6	25'0	
1866	...	69,920	39'6	30'7		1896	...	123,926	28'6	18'3	
1867	...	71,294	40'8	27'5		1897	...	124,675	29'1	20'2	
1868	...	72,696	43'3	26'9		1898	...	125,430	29'1	19'4	
1869	...	74,125	40'5	31'5		1899	...	126,185	28'8	20'6	
1870	...	75,583	40'7	30'6		1900	...	126,951	27'0	22'2	
						1901	127,626	127,823	26'5	19'5	
						1902	...	130,239	25'7	17'2	
						1903	...	131,079	25'2	15'7	
						1904	...	131,908	23'5	17'2	
						1905	...	132,742	24'0	16'4	
						1906	...	133,583	25'5	16'4	
						1907	...	134,438	24'9	17'0	
						1908	...	135,278	25'2	15'9	

* Part of Witton, Livesey, and Little Harwood—population 8,662.
Half of this has been added to 1877 population.

† Part of Little Harwood and Lower Darwen—population 2,394.
Half of this has been added to year 1879 population.

‡ Part of Witton and Livesey added in November, 1901.

TABLE V.

1908.

AGE PERIODS	MALES.		FEMALES.	
	Deaths.	Death Rate	Deaths.	Death Rate
0-5	400	63·7	313	50·9
5-15	34	2·7	39	2·8
15-25	46	3·5	47	2·9
25-35	58	5·8	56	4·4
35-45	70	8·0	73	6·7
45-55	119	19·2	111	15·7
55-65	168	47·0	149	33·3
65-75	140	91·0	170	77·3
75 and upwards.	62	150·8	102	158·1

TABLE VI.

Monthly Births and Deaths for 1908.

Month.	Birth Rate.	Death Rate	Measles.	Scarlet Fever	Whooping Cough.	Croup.	Typhoid Fever.	Diphtheria	Diarrhoea	Lung Diseases.	Tuberculosis.	All Other Diseases.
January ...	26·5	16·3	...	1	4	1	1	1	.	48	22	111
February ...	25·1	20·0	...	1	4	...	2	2	4	53	15	136
March ...	23·4	14·2	1	.	1	1	...	...	...	38	16	108
April ...	28·4	16·0	.	2	3	...	1	2	3	25	23	120
May ...	27·5	11·9	...	1	...	2	...	1	5	25	18	85
June ...	26·8	14·0	...	2	4	..	...	2	7	19	16	108
July ...	28·5	10·8	.	2	1	1	1	.	6	15	15	85
August	25·5	15·1	1	3	...	...	...	...	28	22	23	103
September	24·1	16·8	...	1	4	..	2	1	36	26	19	106
October	23·1	16·7	3	2	3	1	3	1	46	19	19	99
November .	20·6	15·5	2	...	2	1	3	1	14	59	16	85
December..	21·7	19·4	8	5	1	...	1	1	3	58	15	138

TABLE VII.—(SHORTER SCHEDULE B)

CAUSE OF DEATH.	0—1		1—5		5—15		15—25		25—65		65 & up		M.	F.	To- TAL.
	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.	M.	F.			
Smallpox .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Measles	2	2	4	0	...	1	...	...	...	...	...	6	9	15	
Scarlet Fever .....	...	1	7	5	3	3	...	...	1	...	...	10	10	20	
Typhus Fever .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Epidemic Influenza	2	...	...	...	...	1	...	2	14	6	3	6	19	15	34
Whooping Cough	8	4	5	9	...	1	...	...	...	...	...	...	13	14	27
Diphtheria & Membranous Croup	1	...	2	4	1	4	...	...	...	...	...	4	8	12	
Croup	1	...	3	2	1	...	...	...	...	...	...	5	2	7	
Enteric Fever .....	...	...	1	...	1	...	1	2	3	6	...	6	8	14	
Other continued Fevers .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cholera .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diarrhœa	28	16	6	5	...	...	...	...	...	...	...	34	21	55	
Plague .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Epidemic or Zymotic Enteritis	41	30	6	13	1	1	...	...	3	2	...	50	47	97	
Enteritis .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Erysipelas .....	...	1	...	...	...	...	...	1	...	1	...	2	1	3	
Puerperal Fever .....	...	...	...	...	...	...	1	...	1	...	...	...	2	2	
Other Septic Diseases .....	...	...	...	...	1	2	...	1	1	...	...	3	2	5	
Intermittent and Malarial Cachexia .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Tuberculosis of Meninges	2	1	2	3	2	3	1	...	2	...	...	7	9	16	
Phthisis	1	...	2	...	2	5	10	14	69	44	1	85	63	148	
Other Tuberculous Diseases	11	8	6	11	1	2	4	1	4	5	...	26	27	53	
Malignant Disease (Cancer) .....	...	...	2	...	...	...	2	33	40	10	21	43	65	108	
Premature Birth	40	26	...	...	...	...	...	...	...	...	...	40	26	66	
Developmental Diseases	14	11	2	...	1	1	...	...	...	...	...	17	12	29	
Old Age .....	...	...	...	...	...	...	...	5	5	56	75	61	80	141	
Meningitis	6	4	7	1	3	...	1	...	3	2	...	20	7	27	
Inflammation and Softening of Brain .....	...	...	...	...	...	...	...	5	4	2	4	7	8	15	
Organic Diseases of Heart	1	2	1	1	3	5	5	4	37	58	32	24	79	94	173
Venereal Diseases	2	1	1	...	...	...	...	...	...	...	...	3	1	4	
Bronchitis	17	15	7	9	1	...	2	1	52	40	31	49	110	114	224
Pneumonia	37	15	18	13	2	1	6	3	42	20	8	13	113	65	178
Pleurisy .....	...	...	...	...	...	...	1	...	2	...	...	1	2	3	
Other Respiratory Diseases .....	...	...	...	...	...	...	...	1	1	...	...	1	1	2	
Diseases of Stomach .....	...	1	...	...	...	...	...	4	5	4	...	5	9	14	
Obstruction of Intestines .....	...	...	...	...	1	...	...	1	2	5	2	4	5	10	15
Cirrhosis of Liver (Alcoholism) .....	...	...	...	...	...	...	...	14	6	4	...	18	6	24	
Nephritis & Brights Disease	2	1	1	1	...	...	1	2	16	17	4	6	24	27	51
Tumour and other Affections of female genital organs .....	...	...	...	...	...	...	...	...	2	...	1	...	3	3	
Accidents and Diseases of Parturition .....	...	...	...	...	...	...	...	4	...	10	...	...	14	14	
Deaths by Suicide .....	...	...	...	...	...	...	...	12	7	1	...	13	7	20	
Homicide .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Deaths from Ill-defined Causes	14	7	1	3	...	1	...	17	13	8	6	40	30	70	
Deaths by Accidents or Negligence	5	8	2	1	7	3	2	...	11	7	5	6	32	25	57
All other Causes	68	53	13	17	4	6	10	6	68	77	32	57	195	216	411
TOTAL	303	207	97	106	34	39	46	47	415	389	202	272	1097	1060	2157

TABLE VIII.

DISEASE.	1902	1903.	1904.	1905.	1906.	1907.	1908.	Death Rate.
	Total De'ths	Total De'ths	Total De'ths	Total De'ths	Total De'ths	Total De'ths	Total De'ths	
Smallpox	2	3	...	...	...	...	...	0'00
Measles	77	53	60	42	63	45	15	0'11
Scarlet Fever	31	13	13	76	33	21	20	0'14
Whooping Cough	23	14	96	11	17	41	27	0'19
Diphtheria	23	26	11	33	26	17	12	0'08
Croup	5	2	...	...	5	4	7	0'05
Enteric Fever	23	15	21	15	14	13	14	0'10
Influenza	27	27	17	20	22	44	34	0'25
General Tuberculosis	18	8	10	17	14	8	15	0'11
Phthisis	163	122	125	142	124	133	148	1'09
Abdominal Tuberculosis...	24	28	40	27	34	36	28	0'20
Tubercular Meningitis and Acute Hydrocephalus...	51	47	28	33	24	36	16	0'11
Other forms of Tuberculosis	6	8	8	7	6	9	10	0'07
Diarrhœa	70	100	125	93	171	56	152	1'12
Enteritis	8	2	3	...	...	4	...	0'00
Atrophy, Debility, Marasmus.....	74	52	67	56	61	51	68	0'50
Rheumatism, R'matic Fev'r	13	16	19	17	13	17	6	0'04
Cancer	91	92	107	113	108	113	108	0'79
Premature Birth	70	83	80	67	72	77	66	0'48
Old age.....	108	127	153	139	143	161	141	1'04
Convulsions	28	36	32	34	40	28	31	0'22
Inflammation of the Brain or Membranes	10	8	5	13	18	9	27	0'19
Apoplexy	93	76	80	83	102	117	110	0'81
Other Nervous Diseases	71	63	74	73	69	65	76	0'56
Diseases of Heart and Blood Vessels.....	167	190	194	155	186	198	173	1'27
Bronchitis	233	211	240	214	178	266	224	1'65
Pneumonia	221	229	249	190	180	228	178	1'31
Cirrhosis of Liver	24	14	13	14	22	18	18	0'13
Acute Nephritis, Bright's Disease.....	52	48	60	64	49	66	51	0'37
Burns and Scalds.....	13	7	10	12	11	19	8	0'05
*Causes unspecified	123	76	50	113	85	85	70	0'51
All Diseases .....	...	...	...	...	...	...	2157	15'94

* Including all cases not certified by a medical man, and all cases where an inquest was held but no definite cause of death shown.

TABLE IX.

Weekly Births and Deaths for 1908.

1908.	Deaths from all causes.	Death Rate per 1,000 per annum.	Deaths from Seven Principal Zymotics.	Death Rate per 1,000 for Zymotics.	Births.	Birth Rate per 1,000 per annum.
Week ending Jan. 4	34	13.0	2	0.7	70	26.9
" " 11	47	18.0	3	1.1	92	35.5
" " 18	46	17.7	1	0.3	51	19.7
" " 25	43	16.6	1	0.3	67	25.7
" Feb. 1	41	15.7	2	0.7	61	23.4
" " 8	47	18.0	0	0.0	48	20.1
" " 15	45	17.2	3	1.1	68	26.1
" " 22	50	19.2	3	1.1	58	22.2
" " 29	63	24.2	3	1.1	71	27.2
" March 7	41	15.7	0	0.0	58	22.2
" " 14	36	13.8	0	0.0	58	22.2
" " 21	39	14.9	1	0.3	59	22.6
" " 28	41	15.7	1	0.3	76	29.2
" April 4	29	11.1	0	0.0	55	21.1
" " 11	50	19.2	3	1.1	87	33.4
" " 18	31	11.9	2	0.7	65	24.9
" " 25	40	15.3	2	0.7	76	29.2
" May 2	45	17.2	1	0.3	64	24.6
" " 9	38	14.6	0	0.0	60	25.3
" " 16	37	14.2	1	0.3	82	31.5
" " 23	31	11.9	1	0.3	87	33.4
" " 30	31	11.9	0	0.0	69	26.5
" June 6	38	14.6	2	0.7	64	24.6
" " 13	33	12.6	2	0.7	57	21.9
" " 20	31	11.9	1	0.3	70	26.9
" " 27	34	13.0	1	0.3	70	26.9
" July 4	34	13.0	3	1.1	70	26.9
" " 11	34	13.0	1	0.3	75	28.8
" " 18	27	10.3	1	0.3	68	26.1
" " 25	33	12.6	0	0.0	81	31.1
" August 1	20	7.6	1	0.3	79	30.3
" " 8	38	14.6	1	0.3	76	29.2
" " 15	37	14.2	0	0.0	38	14.6
" " 22	33	12.6	0	0.0	98	37.6
" " 29	44	16.9	2	0.7	54	20.7
" Sept. 5	45	17.2	0	0.0	66	25.3
" " 12	47	18.0	3	1.1	65	24.9
" " 19	41	15.7	2	0.7	63	24.2
" " 26	49	18.8	4	1.5	56	21.5
" Oct. 3	38	14.6	0	0.0	56	21.5
" " 10	36	13.8	2	0.7	59	22.6
" " 17	42	16.1	3	1.1	61	23.4
" " 24	46	17.6	1	0.3	74	28.4
" " 31	52	19.9	5	1.9	58	22.2
" Nov. 7	39	14.9	1	0.3	57	21.9
" " 14	41	15.7	1	0.3	60	23.0
" " 21	47	18.0	4	1.5	56	21.5
" " 28	39	14.9	2	0.7	42	16.1
" Dec. 5	39	14.9	3	1.1	55	21.1
" " 12	51	19.6	5	1.9	67	25.7
" " 19	50	19.2	5	1.9	59	22.6
" " 26	49	18.8	3	1.1	50	19.2

TABLE X.

WARDS.	Popula- tion.	Deaths.	Births.	Death Rate.	Birth Rate.	Deaths under one year per 1000 Births.	Death- rate from six Zymotic Diseases.	Death- rate from Diar- rhoea.	Death- rate from Bron- chitis and Pneu- monia.	Death- rate from Phthi- sis.
ST. STEPHEN'S..	9826	173	283	17.6	28.8	137.8	0.9	1.4	3.1	0.7
TRINITY	10377	174	281	16.7	27.0	153.0	0.7	1.5	2.7	1.4
ST. MICHAEL'S..	9486	137	208	14.4	21.9	120.1	0.8	0.5	3.0	0.9
ST. JOHN'S	7998	105	200	13.1	25.0	155.0	1.0	0.7	1.7	0.5
ST. SILAS'	10533	112	146	10.6	13.8	75.3	0.4	0.09	1.9	0.2
ST. PAUL'S ...	10161	167	259	16.4	25.4	146.7	0.4	0.8	3.5	0.9
ST. PETER'S...	7533	191	191	25.3	25.3	240.8	0.3	2.7	6.2	2.9
ST. MARY'S	6815	169	189	24.7	27.7	185.1	0.2	2.6	4.8	1.9
ST. MATTHEW'S	9987	158	286	15.8	28.6	143.3	1.5	1.3	2.4	1.3
ST. THOMAS' ...	13757	165	314	11.9	22.8	127.3	0.2	1.3	2.2	0.8
PARK	9431	164	277	17.3	29.3	169.6	0.3	0.7	3.8	1.3
ST. LUKE'S	8816	159	257	18.0	29.1	147.8	0.6	1.3	3.0	1.0
ST. MARK'S	9500	131	266	13.7	28.0	124.0	0.3	0.5	2.2	0.8
ST. ANDREW'S..	11058	152	258	13.7	23.3	166.6	0.9	0.6	2.0	0.9
BOROUGH	135278	2157	3415	15.9	25.2	149.3	0.6	1.1	2.9	1.0

TABLE XI.

Towns.	Birth Rate.	Death Rate.	Deaths under 1 year per 1000 births	Death rate over one year.	Death rate from the seven Zymotic diseases	Death rate from Diarrhoea.	Death rate from Violence.	Inquest Cases percent- age to total Deaths.	Uncertified cause of Death percent- age to total Deaths.
London ...	25·4	13·8	113	11·1	1·36	0·53	0·57	10·1	0·1
West Ham	28·9	13·8	129	10·3	2·38	1·00	0·61	8·9	0·05
Croydon ...	25·4	12·8	101	10·4	1·38	0·30	0·34	9·2	0·0
Brighton...	21·3	14·7	104	12·7	0·63	0·22	0·53	8·4	0·05
Portsmouth	28·4	13·7	98	11·1	0·96	0·26	0·58	10·1	0·4
Plymouth...	22·2	15·0	129	12·3	0·91	0·48	0·54	8·2	0·0
Bristol.....	23·1	13·5	126	10·8	1·15	0·34	0·43	8·7	0·2
Cardiff.....	26·6	12·9	126	9·7	1·10	0·64	0·59	10·3	0·1
Swansea ...	33·1	18·6	152	13·7	1·60	0·79	0·97	10·4	0·1
W'h'mpton	25·8	14·3	132	11·0	1·21	0·43	0·48	8·6	0·3
B'rmingh'm	28·4	15·9	145	11·9	1·86	0·80	0·64	5·0	3·8
Norwich ...	25·3	14·1	115	11·1	1·13	0·39	0·40	6·3	0·7
Leicester...	23·4	12·9	132	10·0	1·50	0·75	0·42	8·0	1·1
Nottingh'm	26·6	15·2	140	11·5	1·24	0·63	0·63	7·1	0·7
Derby	25·9	13·0	112	10·3	0·93	0·33	0·47	10·4	0·0
Birkenhead	31·5	15·8	130	11·6	1·90	0·77	0·58	7·4	0·8
Liverpool..	31·8	19·2	142	14·9	2·20	0·84	0·74	6·2	2·6
Bolton.....	24·5	15·5	149	12·0	1·69	0·83	0·54	6·8	0·4
Manchester	29·2	18·2	151	14·0	2·26	0·92	0·72	7·3	0·6
Salford ...	29·6	17·8	153	13·5	3·04	0·98	0·62	7·7	0·5
Oldham ...	28·0	19·8	160	15·6	2·50	1·14	0·52	6·4	0·1
Burnley ...	28·2	17·9	201	12·4	2·83	1·60	0·53	5·0	1·7
Blackburn	25·2	15·9	149	12·1	1·77	1·12	0·56	6·4	1·6
Preston ..	27·7	17·9	154	13·9	2·23	0·95	0·62	4·8	3·4
Hudd'sfield	24·4	17·0	111	14·6	1·57	0·53	0·51	6·7	1·0
Halifax ...	19·0	14·1	101	12·3	1·01	0·15	0·41	6·3	1·4
Bradford...	20·2	15·5	143	12·8	1·37	0·65	0·51	8·6	0·2
Leeds	24·8	15·3	138	12·0	1·51	0·68	0·57	8·8	0·1
Sheffield ...	30·7	15·8	140	11·7	1·83	0·86	0·56	5·6	2·5
Hull.....	30·3	16·1	145	11·9	2·19	1·37	0·72	9·2	0·8
Sunderland	33·0	17·7	147	13·1	1·85	0·65	0·64	6·1	2·2
Gateshead..	20·9	14·9	149	10·5	1·90	0·98	0·42	3·5	5·4
Newcastle..	29·8	15·9	137	12·1	1·26	0·46	0·52	7·8	0·3

TABLE XII.

Death-rates from Zymotic Diseases in the 33 large towns

	Small Pox.	Measles	Scarlet Fever.	Diph- theria.	Whooping Cough.	Enteric Fever.	Dianthra
London	0.00	0.31	0.11	0.15	0.20	0.04	0.53
West Ham	0.00	0.70	0.15	0.17	0.26	0.09	1.00
Croydon ...	0.00	0.58	0.04	0.24	0.17	0.03	0.30
Brighton ...	0.00	0.17	0.01	0.07	0.14	0.03	0.22
Portsmouth	0.00	0.06	0.04	0.23	0.26	0.12	0.26
Plymouth ...	0.00	0.01	0.00	0.12	0.22	0.08	0.48
Bristol	0.00	0.26	0.02	0.16	0.34	0.02	0.34
Cardiff	0.00	0.02	0.05	0.11	0.24	0.03	0.64
Swansea ...	0.00	0.45	0.07	0.04	0.24	0.01	0.79
Wolverh'ton	0.00	0.06	0.09	0.31	0.22	0.10	0.43
Birmingham	0.00	0.10	0.13	0.18	0.55	0.08	0.80
Norwich ...	0.00	0.01	0.02	0.21	0.20	0.29	0.39
Leicester ...	0.00	0.70	0.11	0.03	0.13	0.03	0.75
Nottingham	0.00	0.11	0.04	0.11	0.23	0.11	0.63
Derby	0.00	0.15	0.01	0.28	0.12	0.04	0.33
Birkenhead	0.01	0.36	0.06	0.10	0.51	0.09	0.77
Liverpool ...	0.00	0.34	0.28	0.17	0.46	0.10	0.84
Bolton	0.00	0.02	0.11	0.09	0.42	0.19	0.83
Manchester	0.00	0.55	0.14	0.18	0.33	0.11	0.92
Salford	0.00	0.69	0.27	0.50	0.43	0.16	0.98
Oldham	0.00	0.56	0.19	0.15	0.37	0.08	1.14
Burnley ...	0.00	0.48	0.12	0.12	0.39	0.11	1.60
Blackburn	0.00	0.11	0.14	0.08	0.19	0.10	1.12
Preston	0.00	0.81	0.01	0.09	0.16	0.21	0.95
Huddersfield	0.00	0.16	0.03	0.09	0.15	0.10	0.53
Halifax	0.00	0.33	0.02	0.11	0.28	0.10	0.15
Bradford ...	0.00	0.24	0.04	0.14	0.19	0.10	0.65
Leeds ...	0.00	0.37	0.03	0.09	0.28	0.05	0.68
Sheffield ...	0.00	0.22	0.08	0.08	0.53	0.05	0.86
Hull	0.00	0.34	0.01	0.18	0.21	0.08	1.37
Sunderland	0.00	0.15	0.04	0.17	0.75	0.09	0.65
Gateshead...	0.00	0.13	0.04	0.20	0.53	0.03	0.98
Newcastle ..	0.00	0.11	0.03	0.12	0.48	0.05	0.46

TABLE XIII.

Showing Population, Birth-rates, and Death-rates, for the last 20 years in Blackburn.

Year.	Esti- mated Popu- lation	Birth Rate.	Death Rate.	Zymotic Death rate in- cluding Diarr- hoea.	Death rate from Bron- chitis, Pneu- monia & Pleurisy.	Death rate from Phthi- sis.	Death rate from other Tuber- cular Diseases	Deaths under 1 year per 1000 Births.
1889	117,086	35.5	25.4	5.1	6.8	1.5	0.7	221
1890	118,780	33.8	23.4	2.8	7.0	1.8	0.7	194
1891	120,245	33.9	25.9	4.3	7.6	1.3	0.7	207
1892	120,972	32.0	21.0	2.8	5.1	1.0	0.9	199
1893	121,704	31.4	22.9	4.8	5.3	1.1	1.1	241
1894	122,440	29.5	17.7	2.9	3.9	1.2	0.7	168
1895	123,181	31.6	25.0	6.1	4.7	1.2	1.1	235
1896	123,926	28.6	18.3	1.9	3.8	1.1	0.5	172
1897	124,675	29.1	20.2	3.2	4.0	1.1	0.7	207
1898	125,430	29.1	19.4	2.6	3.6	1.2	0.5	204
1899	126,185	28.8	20.6	2.7	4.4	1.2	0.5	193
1900	126,951	27.0	22.2	3.9	4.8	1.1	0.7	221
1901	127,719	26.5	19.5	3.0	3.7	1.1	0.7	193
1902	130,239	25.7	17.2	1.9	3.5	1.2	0.7	157
1903	131,079	25.2	15.7	1.7	3.3	0.9	0.6	158
1904	131,908	23.5	17.2	2.4	3.7	0.9	0.6	191
1905	132,742	24.0	16.4	2.0	3.0	1.0	0.6	146
1906	133,583	25.5	16.4	2.4	2.7	0.9	0.5	155
1907	134,438	24.9	17.0	1.4	3.7	0.9	0.6	151
1908	135,278	25.2	15.9	1.7	2.9	1.0	0.5	149

TABLE XIV.
INQUEST CASES.

Natural Causes	35
Accidents	47
Burns	8
Suicide.....	22
Suffocation (including "Overlaying")	17
Poisoning	1
Scalds : $2\frac{3}{4}$ years... ..	1
Excessive Drinking	4
Blood Poisoning	2
Accidentally Drowned	2
Convulsions	1

Ages of persons burnt :—8 months, 3 years, 5 years, 21 years, 47 years, 52 years, 69 years, and 81 years.

Ages of persons suffocated :— 28 hours, 20 days, 24 days, 3 weeks, two at 4 weeks, 6 weeks, 7 weeks, 11 weeks, 13 weeks, 14 weeks, two at 4 months, 19 years, 60 years, 64 years, and 70 years.

There were 140 Inquests held during the year as compared with 127 last year.

INFANTILE MORTALITY.

During 1908 the death-rate amongst children under one year of age per 1,000 births was 149.3, compared with 151.7 during 1907, and 155.9 during 1906.

The average Infantile Mortality for the ten years 1899 to 1908 was 171.8, so that Blackburn has shown a marked improvement in this respect. I would say here that there is still great room for improvement. Each year I am impressed by the fact that there is a wastage of infant life, and I hold the opinion very strongly that much of this wastage, which is brought about in various ways, is very often the result of ignorance and carelessness on the part of parents.

The Infantile Death-rates or deaths under one year to 1,000 births, for England and Wales during 1908 were as follows :—

England and Wales	121
76 great towns	128
142 smaller towns	124
England and Wales (less the 218 towns).....	110

It will, therefore, be seen that the infantile death-rate of Blackburn during 1908 was 21 greater than that of the 76 great towns for the same year.

In Tables XI. and XXI. an opportunity has been given for a comparison between Blackburn and many of these towns.

During 1908, 510 deaths occurred under the age of one year out of the total number of deaths, namely 2,157, *i.e.*, 23.6 per cent.

The greatest number of these deaths under one year during 1908 occurred from Diarrhœa. The next most frequent causes of death during the first year of life were from premature birth, and from lung diseases.

On referring to Table XV., it will be seen that all the Wards except St. Silas's Ward had infantile death-rates during 1908, greater than 100 per 1,000 births. It is only fair, however, to state that the birth-rate in this Ward is only approximately half that of any other Ward. It has previously been stated that any infantile mortality over 100 deaths per 1,000 births should be considered to be due to causes which are preventible. The most rigorous attempts should be made to reach this standard.

St. Peter's Ward had the unenviable notoriety of having an infantile mortality far in excess of any other Ward, namely, the high rate of 240 per 1,000 births.

In Table XVII. I have arranged, as in previous years, the deaths under one year for 1908, according to days, weeks, and months, and the following conclusions may be drawn from this analysis:—

(a) The number of deaths on the *first day* of life was far greater than on any succeeding day, and was greater by 31 than the combined total number of deaths on the second, third, fourth, fifth, sixth, and seventh days of life.

(b) The number of deaths during the *first week* of life was greater by 29 than the combined total number of deaths during the second, third, and fourth weeks of life.

(c) The number of deaths during the *first month* of life was more than twice as great as the number in any succeeding month during the first year of life. After the first and second months, there was a marked diminution in the monthly number of deaths during the first year.

PARTICULARS RESPECTING THE 510 DEATHS OF CHILDREN UNDER ONE YEAR OF AGE.

During the year, full inquiries have been made respecting the 510 children who died below the age of one year, and some very interesting information has been obtained in this way. Of course it is advisable that as many visits as possible should be paid to the houses whilst the children are living. At the same time valuable information can be obtained by making inquiries

as to the conditions under which the babies lived up to their death, so that, if possible, this information may be available for future guidance

Of these 510 infants who died, 303 were males, and 207 were females. Forty-eight were illegitimate.

As to the occupation of the mothers it was ascertained that 182 were employed at home in housework. The majority of the remaining mothers were employed in the cotton trade of the town, thus—

183	were employed as weavers.
33	.. .. winders.
25	.. .. cardroom-hands.
19	.. .. ring-spinners.
5	.. .. warpers.
39	were employed in other occupations, and in
24	instances the occupation of the mother was
	not ascertained.

Seventeen of these 510 deaths were uncertified; and respecting the causes of 17 other deaths, inquests were held.

In the majority of these 17 inquests it transpired that death was due to over-lying.

Inquiries were also made as to the day on which a doctor was first called in to see the child before death, and the following statement shows the result:—

In 7 cases on the day of death.
One day before death in 13 cases.
Two days 18 ..
Three days 17 ..
Four days 12 ..
Five days 14 ..
Six days 7 ..
One week 60 ..
Two weeks 40 ..
Three weeks 39 ..
One month 24 ..
Two months 28 ..
Three months and over 13 ..

In 80 cases the doctor was called in at birth of child, and in 69 cases had been in attendance "on and off" since birth.

127 of these 510 children, who died within the first year of life, were born prematurely.

Respecting the method of feeding, it was found that 265 of the children had been artificially fed, and that 114 had been fed naturally, whilst in 34 instances these two methods of feeding had been combined. In 63 instances the children did not live sufficiently long to be fed.

Fifty-nine of the 510 children who died had been nursed out.

Finally it was found that 336 of these 510 children who have died during the first year of life had been insured, and that 140 had not been insured, whilst in 34 instances this information could not be obtained.

The Notification of Births Act which came into force in Blackburn, on February 5th, 1908, has been administered thoroughly, and two Lady Sanitary Inspectors have continued to visit homes where births have occurred, and to give instructions regarding the feeding and management of infants. The same form of inquiry has been used which I gave in my Annual Report for 1907.

I feel sure that the beneficial results from the work of these two ladies will be seen in a few years, and already their work is being appreciated by the public, in fact much more so than it has been hitherto.

The ladies have been refused admission to houses on three occasions only during the year. Instructions as to the proper feeding of infants have been carried out more efficiently during 1908 than during 1907.

It is very difficult to get many mothers to understand that a baby requires fresh air and light. For example, the baby is frequently kept during the day-time in or near the dark recess at the foot of the stairs. Sometimes, also, a curtain is drawn across the recess. Then many mothers also go to the other extreme, and the baby is taken out of doors with little or no extra clothing. In the first case, fear is expressed that the baby will "catch cold." In the second case it would seem as if the baby was intended to "catch cold."

Also, many infants are dressed in such a way that their arms are uncovered. This is absolutely indefensible, for it should always be remembered that heat is lost from children's bodies more quickly than from the bodies of adults. The same scarcity of covering sometimes applies to the legs of infants.

In a considerable number of cases the lady inspectors have been successful in persuading mothers to provide woollen undergarments with long sleeves.

I dealt very fully with many other matters respecting infantile mortality in my Annual Report for 1907.

In all inquiries as to the feeding and management of infants, very great care should be taken to state precisely the age of the infant when the first and subsequent visits were made to the homes. Otherwise inaccuracy in statistics will result. For example, if a large number of infants have been visited at a very early age, say within the first month, and have not been re-visited, the number of breast-fed infants will be found to be much greater than would be the case if the same infants were visited, for the first time, at the age of two or three months. The same remark applies to the patent foods used, or to the use of the "dummy teat."

During 1908 the two Lady Sanitary Inspectors reported upon 3,157 infants. In 122 cases particulars could not be obtained fully owing to change of address, etc.

The number of visits paid during the year to houses where births had occurred was 3,616.

During these visits it was found that the occupations of the mothers engaged in the cotton industry were as follow :—

Weavers	1,250
Winders	239
Warpers	41
Ring-Spinners	124
Cardroom Hands	207
1,075 mothers were engaged in housework.	

The ages of mothers at the birth of the first child, in cases where it could be obtained, were as follow :—

Under 20 years	579
20 to 30 years	2,161
30 years and over	190

Of the cases reported upon, it was found that at the confinement—

1,222 cases had been attended by doctors.

317	..	..	..	doctors and midwives together.
1,519	..	..	..	midwives alone.
99	..	..	..	handy women.

Regarding the duration of the period during which the mothers (other than housewives) remained at home, *before* confinement, it was ascertained, in the 1,516 instances where this information was obtained, that 69 were at home for one week only, 291 under 1 month, 614 under 3 months, and 542 over 3 months.

The duration of the period during which the mothers (other than housewives) remained at home *after* confinement was ascertained in 361 cases, and it was found that 170 remained at home under 1 month, 163 under 3 months, and 28 over 3 months.

At the first visit of the Lady Inspector it was found that—

2,192 infants were being fed on the breast alone.

326	„	„	partly on breast and partly on bottle.
421	„	„	with hygienic bottle.
206	„	„	with long tube bottle.

And in the remainder of the cases different methods of feeding were used.

In 503 instances it was found that breast feeding continued up to one month, in 356 instances up to 2 months, and in 461 instances up to 3 months.

It was also found that 145 premature births occurred.

A large number of children are nursed out during the day. I dealt with this matter very fully in my Report for 1907.

1,877 re-visits were paid to houses where births had occurred. It was found that the instructions had been carried out in the majority of instances, but in 226 cases they had been ignored.

As to the method of feeding the infants, during these 1,877 re-visits it was found that—

410 cases were fed on breast alone.

160	„	„	breast and bottle.
185	„	„	hygienic bottle.
101	„	„	long-tubed bottle.
32	„	„	with a spoon.

I should like to lay great stress here upon the great importance and desirability of re-visiting these infants. Although the first visit by the Lady Inspector to the house is useful, the value of such work would be greatly enhanced if a greater number of re-visits could be paid. The mothers would then know that a continued interest was being taken in the welfare of their babies, and undoubtedly it would be much better for the babies. Two additional Lady Inspectors would be required to carry out the work satisfactorily.

Whilst visiting houses where births have occurred recently, the Lady Inspectors have met certain mothers who were anxious as to the welfare and progress of their babies. Such mothers, when able to do so, have been invited and encouraged to bring their babies to the Health Office each Thursday afternoon, in order that the latter might be weighed and inspected, and that suitable advice might be given. This refers especially to mothers who are in better circumstances than those who attend the Nursing Mothers' Aid Society in Mary Ann-street.

I trust that a greater number of mothers will take the advantage of this opportunity of receiving practical information, in the future, and I have asked Dr. Linton to supervise this work. Any measure which tends to the preservation of infant life should be encouraged.

Some mothers are so superstitious as to believe that weighing a baby is unlucky. As an instance of this it is interesting to record, one grandmother declared that she would have her daughter prosecuted for manslaughter should the latter's child die after having been weighed.

Fortunately such superstitions are less common than they were formerly.

During the year an inquiry has been commenced in order to ascertain the part played in the causation of infantile mortality from the employment of married women in the mills. This has been carried out upon the lines indicated in my last Annual Report and suggested by the Home Office Authorities. It certainly is advisable that reliable statistics should be obtained on this matter, especially in a town such as Blackburn which is such an important centre of the cotton industry and where so many married women are employed in the cotton mills. It is possible that such inquiries carried out in large towns with care may have an effect upon future legislation respecting the employment of married women in factories.

A full reference was made in my Report for 1907 to the work carried out by the Nursing Mothers' Aid Society in Blackburn. This useful work has continued during 1908.

TABLE XV.
INFANTILE MORTALITY IN WARDS FROM
1899 to 1908.

WARD.	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908	Average for 10 years.
St. Stephen's	183	228	145	168·1	123·8	177·0	156·1	157·3	126·8	137·8	100·2
Trinity ...	207	216	240	143·3	194·4	192·4	182·9	169·4	158·8	153·0	185·7
St. Michael's	146	184	111	152·4	97·5	132·4	138·3	133·0	130·2	120·1	134·4
St. John's	133	285	165	122·1	177·0	159·2	141·4	140·6	151·8	155·0	163·0
St. Silas'...	101	107	156	70·0	122·9	129·2	75·4	97·2	108·1	75·3	104·2
St. Paul's	208	294	180	152·7	161·7	251·8	153·8	127·8	140·4	146·7	181·6
St. Peter's	209	247	238	183·4	181·8	230·3	131·1	230·7	211·6	240·8	210·3
St. Mary's	222	280	385	138·7	229·2	227·9	176·1	257·6	262·1	185·1	236·3
St. Matthew's	243	219	247	145·1	171·5	195·6	130·9	133·5	144·8	143·3	177·3
St. Thomas's	205	248	189	195·7	132·0	215·0	132·0	135·8	125·4	127·3	170·5
Park	203	153	148	167·3	170·8	163·7	157·2	148·2	146·8	169·6	162·7
St. Luke's	221	282	231	180·7	166·0	189·8	206·8	224·5	204·9	147·8	205·4
St. Mark's	218	234	156	172·2	149·6	194·6	121·0	187·0	145·1	124·0	170·1
St. Andrew's	173	205	170	177·1	152·8	205·1	125·0	83·3	112·7	166·6	157·0
Borough...	193	221	193	157·8	158·2	191·9	146·2	155·9	151·7	149·3	171·8

TABLE XVI.

POPULATIONS, ACREAGE, DENSITY AND AVERAGE
INFANTILE MORTALITY IN WARDS.

Name of Ward.	Population.	Acreage.	Density, <i>i.e.</i> , No. of Persons per Acre.	Average Infantile Mortality from 1899 to 1908.
St. Stephen's...	9826	1158·849	8·4	160 2
Trinity	10377	144·697	71·7	185 7
St. Michael's...	9486	630·361	15·0	134 4
St. John's	7998	102·319	78·1	163·0
St. Silas'	10533	993·871	10·5	104 2
St. Paul's	10161	123·476	82·2	181·6
St. Peter's.....	7533	134·198	56·1	210 3
St. Mary's.....	6815	171·282	39·7	236 3
St. Matthew's..	9987	112·344	88·8	177 3
St. Thomas' ...	13757	1721·649	7·9	170 5
Park	9431	654·017	14·4	162 7
St. Luke's ...	8816	154·275	57·1	205·4
St. Mark's.....	9500	404·842	23·4	170·1
St. Andrew's...	11058	925·427	11·9	157 0
Borough	135278	7431·607	18·2	171·8

TABLE XVII.—Deaths under One Year, arranged according to Days, Weeks, and Months.

	1st day.	2nd day.	3rd day.	4th day.	5th day.	6th day.	7th day.	1st week.	2nd week.	3rd week.	4th week.	Under 1 month.	1 month to 2.	2 months to 3.	3 months to 4.	4 months to 5.	5 months to 6.	6 months to 7.	7 months to 8.	8 months to 9.	9 months to 10.	10 months to 11.	11 months to 12.	Total.
Six Zymotic Diseases .....	...	...	...	...	...	...	...	...	...	...	1	1	1	2	...	...	3	1	1	2	2	3	2	18
Diarrhoea .....	...	...	...	...	...	...	...	...	5	3	1	9	14	12	15	14	14	8	10	7	8	1	3	115
Lung Diseases .....	...	...	...	1	..	1	...	2	...	2	1	5	12	4	10	6	9	8	6	6	9	3	6	84
Convulsions	3	1	...	...	1	...	...	5	4	3	2	14	5	1	1	2	...	1	2	1	...	...	...	27
Tuberculosis .....	...	...	...	...	...	...	...	...	...	...	...	...	...	2	4	2	2	1	2	3	1	3	3	23
Debility, Marasmus, Atrophy, Inanition.....	4	2	1	...	...	...	...	7	2	3	2	14	14	9	7	3	3	4	3	2	1	...	2	62
Premature Birth	31	4	7	...	2	1	1	46	3	5	2	55	7	1	2	...	...	...	...	...	...	...	...	66
Dentition .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	1	...	1	1	1	4
All others	24	3	3	2	...	1	...	33	5	10	10	58	10	5	5	7	6	7	...	3	2	4	4	111
All Causes ...	62	10	11	3	3	3	1	39	19	26	19	157	63	36	44	34	37	30	25	24	24	15	21	510

TABLE XVIII. Deaths under One Year from 1892-1908.

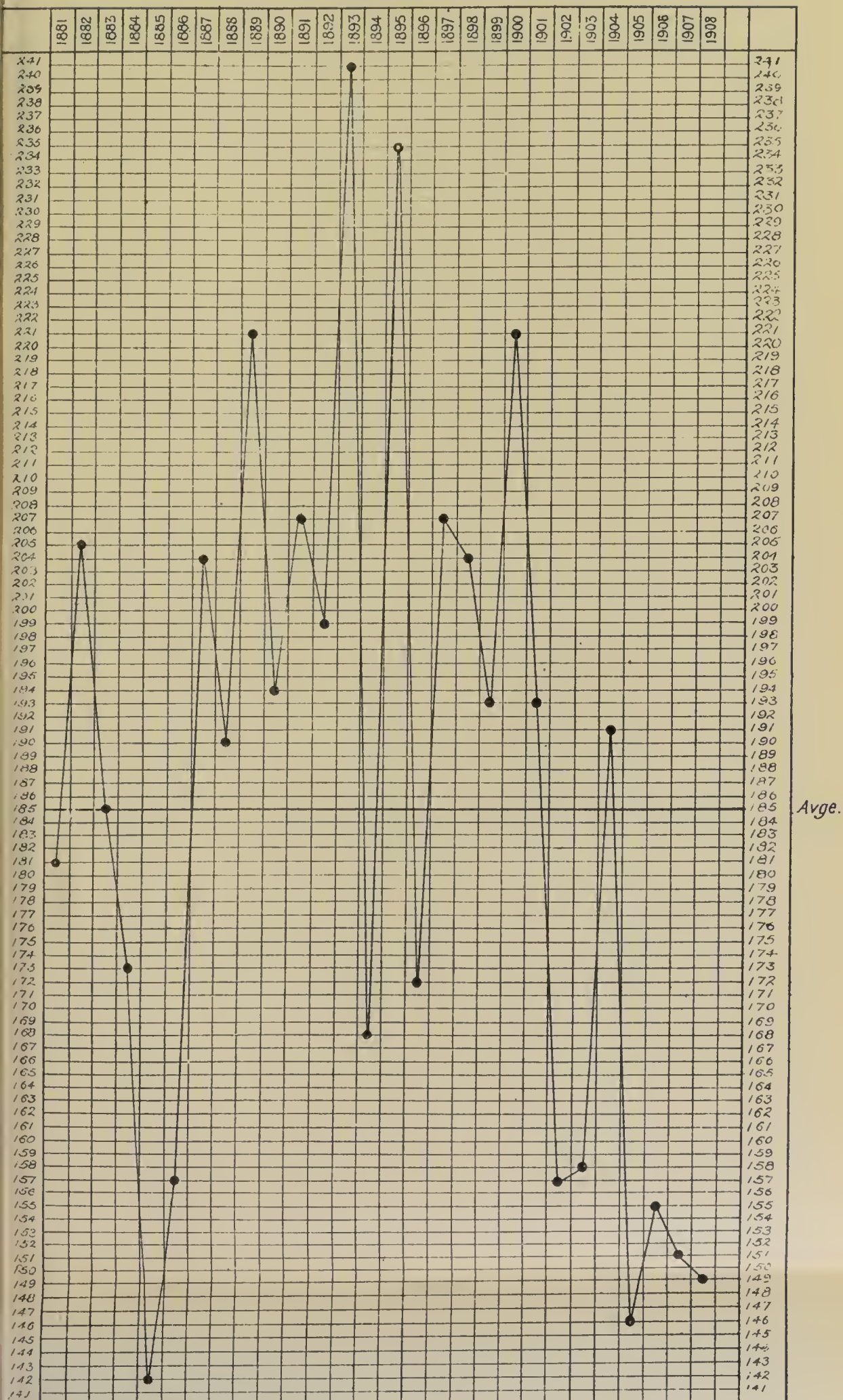
Disease.	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908
Zymotic Diseases.....	62	59	29	107	30	75	17	51	57	36	29	24	54	22	27	34	18
Diarrhœa	78	190	58	211	79	112	153	79	143	149	54	78	98	76	136	40	115
Lung Diseases	153	172	103	124	107	138	114	107	140	100	99	116	139	83	69	124	84
Convulsions	98	85	68	63	58	51	51	54	49	40	23	30	30	26	35	22	27
Tuberculosis	60	81	45	59	36	46	31	26	45	41	46	38	43	28	20	30	23
Debility, Atrophy, Marasmus, Inanition...	48	23	73	45	48	53	63	39	24	47	69	46	59	54	71	48	62
Premature Birth, Developmental.....	154	111	87	115	82	80	93	105	110	103	90	100	97	86	89	107	91
Dentition.....	20	7	11	26	14	19	12	21	17	18	20	7	10	10	17	17	4
All Others	103	194	135	170	157	178	216	223	177	122	100	84	65	82	69	86	86
All Causes	776	922	609	920	611	752	750	706	762	656	530	523	595	467	533	508	510

TABLE XIX.—Analysis of Deaths under One Year of Age for the last Eight Years.

	1901.		1902.		1903.		1904.		1905.		1906.		1907.		1908.	
	Deaths	Rate per 1000 Births.	Deaths	Rate per 1000 Births.	Deaths	Rate per 1000 Births	Deaths	Rate per 1000 Births	Deaths	Rate per 1000 Births	Deaths	Rate per 1000 Births	Deaths	Rate per 1000 Births	Deaths	Rate per 1000 Births
Zymotic Diseases	36	10.6	29	8.6	24	7.2	54	17.4	22	6.8	27	7.8	34	10.1	18	5.2
Diarrhœa	149	44.0	54	16.0	78	23.6	98	31.6	76	23.8	136	39.7	40	11.9	115	33.6
Lung Diseases ..	100	29.8	99	29.4	116	35.1	139	44.8	83	25.9	69	20.1	124	37.4	84	24.5
Convulsions	40	11.5	23	6.8	30	9.0	30	9.6	26	8.1	35	10.2	22	6.5	27	7.9
Tuberculosis	41	12.1	46	13.7	38	11.5	43	13.8	28	8.7	20	5.8	30	8.9	23	6.7
Debility, Atrophy, Marasmus, Inanition	47	13.8	69	20.5	46	13.9	59	19.0	54	16.9	71	20.7	48	14.3	62	18.1
Premature Birth, Developmental.	103	30.4	90	26.8	100	30.2	97	31.2	86	26.9	89	26.0	107	31.9	91	26.6
Dentition.....	18	5.3	20	5.9	7	2.1	10	3.2	10	3.1	17	4.9	17	5.0	4	1.1
All Others	122	36.0	100	29.7	84	25.4	65	20.9	82	25.6	69	20.1	86	25.6	86	25.1
All Causes	656	193.7	530	157.8	523	158.2	595	191.9	467	146.2	533	155.9	508	151.7	510	149.3

CHART 1.

Infantile Mortality, 1881—1908.



Notifications received under the Notification
of Births' Act.

TABLE XX.

Month	Births Notified	Stillbirths Notified	Medical Men	Midwives	Parents	Others	Males	Females	Sex not stated
Jan. and Feb.	297	10	99	138	54	6	149	142	6
March	317	10	81	129	104	3	159	150	8
April	324	9	88	144	89	3	153	164	7
May	327	18	84	143	98	2	160	157	10
June	327	12	99	146	78	4	179	141	7
July	293	13	77	153	61	2	140	147	6
August	315	19	98	146	70	1	161	143	11
September	286	10	95	132	57	2	150	126	10
October	283	10	63	149	68	3	167	104	12
November	266	17	72	142	52	...	135	124	7
December	272	11	48	174	50	...	144	123	5
TOTAL	3307	139	904	1596	781	26	1697	1521	89

TABLE XXI.

28 Large Towns.	Deaths Under One Year to 1,000 Births Registered.													Average
	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908
London.....	165	160	158	167	167	160	149	141	131	144	131	132	115	113
Brighton...	164	135	142	181	173	166	160	125	110	134	100	111	112	104
Portsmouth.....	174	154	168	156	197	155	162	151	113	141	133	130	124	98
Norwich.....	190	164	196	192	179	178	186	156	149	179	174	176	125	115
Plymouth.....	178	177	183	170	190	175	149	154	144	173	136	152	109	129
Bristol.....	143	142	148	164	158	133	130	130	116	133	122	128	100	126
Wolverhampton.....	217	184	217	200	184	206	162	133	141	152	136	140	130	132
Birmingham.....	182	197	215	191	191	199	186	156	158	195	155	168	148	145
Leicester.....	202	187	205	191	195	175	175	152	161	163	147	166	132	132
Nottingham.....	189	168	206	178	210	196	193	158	164	175	155	171	165	146
Derby.....	160	150	167	169	162	174	154	124	128	143	151	114	120	112
Birkenhead.....	173	176	162	186	183	160	181	148	155	180	127	151	109	136
Liverpool.....	210	172	200	184	198	186	187	162	159	196	154	171	145	142
Bolton.....	211	168	186	168	181	171	171	134	152	167	166	138	146	149
Manchester.....	203	176	194	197	206	189	198	152	168	187	157	166	147	151
Salford.....	230	199	220	212	209	207	204	155	166	193	150	160	141	153
Oldham.....	189	183	183	175	198	172	172	148	160	155	150	145	145	160
Blackburn.....	235	172	207	205	189	221	193	157	159	191	146	155	151	149
Preston.....	248	176	263	225	255	236	216	188	161	183	152	200	158	154
Huddersfield.....	157	166	130	153	152	132	131	137	120	136	119	135	97	111
Halifax.....	157	148	140	163	159	132	127	143	122	130	130	118	104	101
Bradford.....	202	141	178	185	181	141	168	138	147	166	144	152	125	143
Leeds.....	193	168	191	182	171	183	188	159	153	176	152	152	132	138
Sheffield.....	196	172	197	195	194	200	200	149	182	158	167	158	146	140
Ilford.....	205	173	178	182	175	183	174	137	162	181	153	161	127	145
Sunderland.....	188	157	164	202	175	169	181	152	156	165	143	140	130	147
Newcastle-on-Tyne.	186	165	177	190	193	170	178	139	165	156	135	151	123	137
Cardiff.....	178	165	150	158	184	141	147	146	122	144	118	135	132	126
Average.....	190	168	183	172	186	175	171	147	147	164	143	148	129	133

TABLE XXII.

Showing Deaths, Death Rates, and Birth Rates in Wards for each Month.

JANUARY.	Birth Rate.	Death Rate.	DEATHS.									
			Measles	Scarlet Fever	Wh'g C'gh	Croup	Typhoid Fever	Diphtheria	Diarrhoea	Lung Diseases	Tuber- culosis	All other Causes
St. Stephen's.....	34·7	21·5	..	1	...	...	...	1	...	5	2	9
Trinity	29·4	10·2	...	...	...	...	...	...	...	1	2	6
St. Michael's.....	22·3	7·4	...	...	...	...	...	...	...	2	...	4
St. John's	33·8	17·6	...	...	1	...	...	...	...	3	...	8
St. Silas'	22·3	8·9	...	...	...	...	1	...	...	2	1	4
St. Paul's	34·7	22·0	...	...	1	...	...	...	...	5	2	11
St. Peter's.....	20·3	21·8	...	...	...	...	...	...	...	2	7	5
St. Mary's	25·9	24·1	...	...	...	...	...	...	...	4	1	9
St. Matthew's	24·7	17·6	...	...	1	...	...	...	...	3	2	9
St. Thomas'	11·1	20·5	...	...	...	...	...	...	...	8	1	15
Park	28·7	8·7	...	...	1	...	...	...	...	3	...	3
St. Luke's.....	40·0	14·6	...	...	...	...	...	...	...	2	1	8
St. Mark's.....	27·2	13·6	...	...	...	...	...	...	...	5	1	5
St. Andrew's	23·4	21·2	...	...	...	1	...	...	...	3	2	15
Borough.....	26·5	16·3	...	1	4	1	1	1	...	48	22	111

FEBRUARY.	Birth Rate.	Death Rate.	DEATHS.									
			Measles	Scarlet Fever	Wh'g C'gh	Croup	Typhoid Fever	Diphtheria	Diarrhoea	Lung Diseases	Tuber- culosis	All other Causes
St. Stephen's.....	21·8	15·4	...	..	...	...	..	..	1	2	1	8
Trinity	23·1	19·4	...	..	...	...	..	..	1	5	1	9
St. Michael's.....	25·2	21·2	...	..	...	...	..	..	..	2	3	11
St. John's	28·4	17·3	...	..	...	...	1	..	..	2	2	7
St. Silas'	13·1	8·3	...	..	...	...	..	..	1	2	..	4
St. Paul's	28·5	31·0	...	..	1	...	..	1	..	4	2	17
St. Peter's.....	30·1	36·8	...	..	...	...	..	..	..	6	1	15
St. Mary's.....	27·7	20·3	...	..	...	...	..	..	..	4	..	7
St. Matthew's	26·5	17·6	...	..	...	...	1	..	..	5	1	7
St. Thomas'	27·5	11·9	...	..	...	...	..	..	..	3	1	9
Park ..	29·4	33·4	...	..	...	...	..	..	..	8	1	16
St. Luke's	38·6	24·3	...	1	1	...	..	..	..	4	1	10
St. Mark's.....	19·9	18·5	...	..	...	...	..	1	..	3	1	9
St. Andrew's	17·1	13·6	...	..	2	...	..	..	1	3	...	7
Borough.....	25·1	20·0	...	1	4	...	2	2	4	53	15	136

TABLE XXII.—*continued.*

MARCH.	Birth Rate.	Death Rate.	DEATHS.									
			Measles	Scarlet Fever	Wh'g C'gh	Croup	Typhoid Fever	Diphtheria	Diarrhœa	Lung Diseases	Tuber- culosis	All other Causes
St. Stephen's.....	31·1	17·9	...	...	...	...	...	...	...	1	1	13
Trinity	21·5	15·8	...	...	1	...	...	...	...	4	1	8
St. Michael's.....	12·4	11·1	...	...	...	...	...	...	...	4	...	5
St. John's	11·7	8·8	...	...	...	...	...	...	...	2	...	4
St. Silas'	8·9	18·9	...	...	...	...	...	...	...	4	...	13
St. Paul's	22·0	11·5	...	...	...	...	...	...	...	3	...	7
St. Peter's	26·5	18·7	...	...	...	...	...	...	...	4	2	6
St. Mary's	36·2	22·4	...	...	...	...	...	...	...	5	2	6
St. Matthew's	20·0	12·9	...	...	...	...	...	...	...	...	1	10
St. Thomas'	16·2	5·1	...	...	...	...	...	...	...	...	1	5
Park	41·1	17·6	...	...	...	...	...	...	...	4	4	7
St. Luke's.....	33·3	20·0	1	...	...	1	...	...	...	3	2	9
St. Mark's.....	29·7	8·6	...	...	...	...	...	...	...	1	...	6
St. Andrew's.....	24·4	14·9	...	...	...	...	...	...	...	3	2	9
Borough.....	23·4	14·2	1	...	1	1	...	...	...	38	16	108

APRIL.	Birth Rate.	Death Rate.	DEATHS.									
			Measles	Scarlet Fever	Wh'g C'gh	Croup	Typhoid Fever	Diphtheria	Diarrhœa	Lung Diseases	Tuber- culosis	All other Causes
St. Stephen's.....	39·5	27·2	...	...	...	...	...	1	1	4	...	16
Trinity	28·1	10·5	...	...	...	...	...	...	1	1	2	5
St. Michael's.....	19·2	17·9	...	...	...	...	...	...	...	4	1	9
St. John's	28·9	9·1	...	...	...	...	...	...	...	...	1	5
St. Silas'	17·3	12·6	...	...	...	...	...	...	...	2	2	7
St. Paul's	27·5	13·1	...	...	...	...	...	...	...	1	1	9
St. Peter's	24·2	20·9	...	...	...	...	...	...	...	4	2	7
St. Mary's.....	21·4	24·9	...	...	...	...	...	...	...	2	3	9
St. Matthew's	35·3	8·5	...	...	1	...	...	1	1	...	1	3
St. Thomas'	31·8	8·8	...	...	1	...	...	...	...	1	1	7
Park	42·5	24·4	...	...	...	...	1	...	...	2	3	13
St. Luke's.....	17·9	17·9	...	...	...	...	...	...	...	1	2	10
St. Mark's.....	20·4	17·9	...	...	...	...	...	...	...	2	2	10
St. Andrew's.....	37·3	17·5	...	2	1	...	...	...	...	1	2	10
Borough.....	28·4	16·0	...	2	3	...	1	2	3	25	23	120

TABLE XXII.—*continued.*

MAY.	Birth Rate.	Death Rate.	DEATHS.									
			Measles	Scarlet Fever	Whooping Cough	Croup	Typhoid Fever	Diphtheria	Diarrhoea	Lung Diseases	Tuberculosis	All other Causes
St. Stephen's.....	37.1	9.5	...	...	...	...	...	...	...	1	...	7
Trinity	24.9	10.2	...	...	...	...	...	...	1	2	2	4
St. Michael's.....	33.5	16.1	...	1	...	...	...	...	1	2	2	7
St. John's	17.6	10.3	...	...	...	...	...	...	...	...	2	5
St. Silas'	15.6	5.5	...	...	...	...	...	1	...	1	1	2
St. Paul's	30.1	10.4	...	...	...	...	...	...	...	1	1	6
St. Peter's	32.8	26.5	...	...	...	...	...	...	1	3	1	11
St. Mary's	32.8	6.9	...	...	...	...	...	...	2	1	2	1
St. Matthew's	29.4	12.9	...	...	...	...	...	...	...	1	...	10
St. Thomas'	23.1	11.1	...	...	...	...	...	...	...	2	2	9
Park	27.4	14.9	...	...	...	1	...	...	...	4	2	5
St. Luke's	36.0	10.6	...	...	...	1	...	...	...	1	1	5
St. Mark's.....	28.4	9.0	...	...	...	...	...	...	...	1	...	7
St. Andrew's.....	22.3	13.8	...	...	...	...	...	...	...	5	2	6
Borough.....	27.5	11.9	...	1	...	2	...	1	5	25	18	85

JUNE.	Birth Rate.	Death Rate.	DEATHS.									
			Measles	Scarlet Fever	Whooping Cough	Croup	Typhoid Fever	Diphtheria	Diarrhoea	Lung Diseases	Tuberculosis	All other Causes
St. Stephen's.....	35.8	8.6	...	...	...	...	...	...	...	...	...	7
Trinity	26.9	21.0	...	1	...	...	...	...	2	...	4	11
St. Michael's.....	21.7	15.3	...	...	2	...	...	...	...	...	1	9
St. John's	24.3	9.1	...	...	...	...	...	...	...	...	...	6
St. Silas'	9.2	10.3	...	...	...	...	...	2	...	3	1	3
St. Paul's	29.9	13.1	...	...	...	...	...	...	...	...	2	9
St. Peter's	17.7	25.8	...	...	1	...	...	...	2	5	...	8
St. Mary's	30.3	35.6	...	...	...	...	...	...	2	3	2	13
St. Matthew's	30.4	12.1	...	...	1	...	...	...	...	2	2	5
St. Thomas'	26.5	9.7	...	...	...	...	...	...	...	2	...	9
Park	27.0	10.3	...	...	...	...	...	...	1	1	1	6
St. Luke's	35.8	17.9	...	...	...	...	...	...	...	1	2	10
St. Mark's.....	38.4	10.2	...	...	...	...	...	...	...	1	...	8
St. Andrew's.....	23.0	7.6	...	1	...	...	...	...	...	1	1	4
Borough.....	26.8	14.0	...	2	4	...	...	2	7	19	16	108

TABLE XXII.—*continued.*

JULY.	Birth Rate.	Death Rate.	DEATHS.									
			Measles	Scarlet Fever	Whooping Cough	Croup	Typhoid Fever	Diphtheria	Diarrhoea	Lung Diseases	Tuberculosis	All other Causes
St. Stephen's.....	28.7	8.3	..	..	..	..	..	..	1	1	3	2
Trinity	37.4	12.4	..	..	..	..	..	..	..	2	2	7
St. Michael's.....	21.0	11.1	..	..	1	..	..	..	..	..	..	8
St. John's	36.7	7.3	..	..	..	..	1	..	..	3	..	1
St. Silas'	18.9	5.5	..	..	..	..	..	..	..	..	1	4
St. Paul's	18.5	6.9	..	..	..	..	..	..	..	1	1	4
St. Peter's.....	21.8	17.1	..	..	..	..	..	..	..	..	3	8
St. Mary's.....	43.1	22.4	..	..	..	..	..	..	..	1	1	11
St. Matthew's	35.3	14.1	..	..	..	1	..	..	..	1	2	8
St. Thomas'	27.3	10.3	..	..	..	..	..	..	1	2	1	8
Park	28.7	11.2	..	..	..	..	..	..	..	2	..	7
St. Luke's	30.7	10.6	..	1	..	..	..	..	2	1	1	3
St. Mark's	33.4	13.6	..	..	..	..	..	..	2	1	..	9
St. Andrew's.....	23.4	6.3	..	1	..	..	..	..	..	..	..	5
Borough.....	28.5	10.8	..	2	1	1	1	..	6	15	15	85

AUGUST.	Birth Rate.	Death Rate.	DEATHS.									
			Measles	Scarlet Fever	Whooping Cough	Croup	Typhoid Fever	Diphtheria	Diarrhoea	Lung Diseases	Tuberculosis	All other Causes.
St. Stephen's.....	21.5	8.3	..	..	..	..	..	..	1	..	1	5
Trinity	32.8	18.1	..	..	..	..	..	..	3	3	2	8
St. Michael's.....	22.3	11.1	..	1	..	..	..	..	..	1	2	5
St. John's	23.5	13.2	..	..	..	..	..	..	2	..	1	7
St. Silas'	12.2	11.1	..	..	..	..	..	..	..	1	2	9
St. Paul's	30.1	11.5	..	..	..	..	..	..	1	4	1	4
St. Peter's	31.2	23.4	1	..	..	..	..	..	4	2	2	6
St. Mary's	18.9	27.6	..	..	..	..	..	..	6	..	2	8
St. Matthew's	28.2	14.2	..	..	..	..	..	..	1	3	2	6
St. Thomas'	26.5	8.5	..	..	..	..	..	..	1	3	1	5
Park	21.2	21.2	..	..	..	..	..	..	3	2	3	9
St. Luke's	20.0	30.7	..	1	..	..	..	..	2	1	2	17
St. Mark's	39.6	9.9	..	..	..	..	..	..	2	..	..	8
St. Andrew's.....	27.6	12.7	..	1	..	..	..	..	2	2	2	6
Borough.....	25.5	15.1	1	3	..	..	..	..	28	22	23	103

TABLE XXII. — *continued.*

SEPTEMBER.	Birth Rate.	Death Rate.	DEATHS.									
			Measles	Scarlet Fever	Whooping Cough	Croup	Typhoid Fever	Diphtheria	Diarrhoea	Lung Diseases	Tuber- culosis	All other Causes
St. Stephen's.....	29·7	21·0	...	...	...	...	...	...	5	4	...	8
Trinity	31·6	23·4	...	...	1	...	...	...	4	2	3	10
St. Michael's.....	20·5	12·8	...	...	...	...	1	...	1	1	2	7
St. John's	28·8	9·1	...	...	...	...	1	...	2	1	...	3
St. Silas'	10·3	5·7	...	...	...	...	...	...	1	2	...	2
St. Paul's	22·7	15·5	...	...	...	...	...	...	1	2	1	11
St. Peter's	30·6	33·8	...	...	...	...	...	...	6	3	1	11
St. Mary's	30·3	35·6	...	1	...	...	...	...	5	3	2	9
St. Matthew's	29·2	18·2	...	...	1	...	...	...	4	1	2	7
St. Thomas'	21·2	12·3	...	...	1	...	...	...	3	1	1	9
Park	24·4	12·8	...	...	...	...	...	...	1	3	2	4
St. Luke's	23·4	17·9	...	...	...	...	...	...	1	1	1	10
St. Mark's.....	17·9	15·3	...	...	1	...	...	1	2	1	2	6
St. Andrew's.....	23·0	13·1	...	...	...	...	...	...	...	1	2	9
Borough.....	24·1	16·8	...	1	4	...	2	136	26	19	106	

OCTOBER.	Birth Rate.	Death Rate.	DEATHS.									
			Measles	Scarlet Fever	Whooping Cough	Croup	Typhoid Fever	Diphtheria	Diarrhoea	Lung Diseases.	Tuberculosis.	All other Causes.
St. Stephen's.....	26·3	21·5	1	...	1	...	...	...	3	2	4	7
Trinity	23·8	19·2	1	...	1	...	1	...	3	4	3	4
St. Michael's.....	19·1	16·7	...	...	...	...	...	1	3	2	1	7
St. John's	23·5	20·6	...	...	...	...	1	...	2	1	...	10
St. Silas'	17·8	8·9	...	...	...	...	...	...	...	...	...	8
St. Paul's	17·3	18·5	...	...	...	...	...	...	4	3	1	9
St. Peter's	20·3	17·1	...	...	...	...	1	...	5	...	1	4
St. Mary's	27·6	22·4	...	...	1	...	...	...	4	...	...	8
St. Matthew's	27·1	20·0	1	1	...	...	...	...	3	2	2	8
St. Thomas'	20·5	12·1	...	...	...	...	...	...	9	1	2	3
Park	26·2	13·7	...	...	...	1	...	...	2	2	1	7
St. Luke's	26·7	22·6	...	1	...	...	...	...	2	1	1	12
St. Mark's.....	34·6	12·3	...	...	...	...	...	...	2	1	2	5
St. Andrew's.....	17·3	12·2	...	...	...	...	...	...	4	...	1	7
Borough.....	23·1	16·7	3	2	3	1	3	146	19	19	19	99

TABLE XXII. *continued.*

NOVEMBER.	Birth Rate.	Death Rate.	DEATHS.									
			Measles	Scarlet Fever	W'p'g C'gh	Croup	Typhoid Fever	Diphtheria	Diarrhoea	Lung Diseases	Tuber- culosis.	All other Causes
St. Stephen's.....	17.0	19.8	...	...	...	1	...	...	2	5	1	7
Trinity	24.6	15.2	...	...	1	...	...	...	1	1	1	9
St. Michael's.....	20.5	14.8	...	...	...	...	...	...	...	4	1	7
St. John's	16.7	13.6	...	...	...	...	...	...	...	3	...	7
St. Silas'	12.6	12.6	...	...	...	...	1	...	...	3	1	8
St. Paul's	20.3	15.5	1	...	...	...	...	...	...	5	3	4
St. Peter's.. ..	19.3	24.2	...	...	...	...	...	...	1	8	4	2
St. Mary's.....	12.4	12.4	...	...	...	...	...	...	...	3	...	5
St. Matthew's	29.2	13.3	1	...	...	...	...	1	2	3	2	4
St. Thomas'	25.6	15.1	...	...	...	...	...	...	4	5	1	7
Park	33.5	16.7	...	...	1	...	...	...	1	4	1	6
St. Luke's	19.3	11.2	...	...	...	...	...	...	2	6	1	3
St. Mark's	17.9	16.6	...	...	...	...	...	...	1	6	...	7
St. Andrew's.. ..	15.8	14.8	...	...	...	...	2	...	...	3	...	9
Borough.....	20.6	15.5	2	...	2	1	3	1	14	59	16	85

DECEMBER.	Birth Rate.	Death Rate.	DEATHS.									
			Measles	Scarlet Fever	Whooping Cough	Croup	Typhoid Fever	Diphtheria	Diarrhoea	Lung Diseases	Tuberculosis	All other Causes
St. Stephen's.....	21.5	29.9	2	1	1	..	..	..	1	6	2	12
Trinity	19.2	22.6	..	1	..	..	..	..	1	7	..	11
St. Michael's.....	23.6	16.1	..	..	..	..	..	..	..	4	3	6
St. John's	25.0	16.1	1	2	..	..	..	..	..	2	..	7
St. Silas'	6.6	14.5	..	..	..	..	..	..	..	3	..	10
St. Paul's	23.1	23.1	..	..	..	..	..	1	..	5	1	13
St. Peter's.....	28.1	32.8	..	..	..	..	..	..	1	5	1	14
St. Mary's.....	24.1	32.8	..	..	..	..	..	..	..	6	1	13
St. Matthew's	27.1	23.5	5	..	..	..	..	..	..	4	3	8
St. Thomas'	16.4	11.1	..	1	..	..	..	..	..	5	1	7
Park	21.2	18.7	..	..	..	..	..	..	..	3	1	11
St. Luke's.....	26.7	10.6	..	..	..	..	..	..	..	3	2	4
St. Mark's.....	26.0	14.8	..	..	..	..	..	..	..	3	..	10
St. Andrew's.....	21.4	13.2	..	..	..	..	1	..	..	2	..	10
Borough.....	21.7	19.4	8	5	1	..	1	1	3	58	15	136

ZYMOTIC DISEASES.

The Zymotic Death-rate during 1908 was 1.7 per 1,000, showing a slight increase on that rate for 1907. The increase was due to the greater number of deaths from Epidemic Diarrhœa.

The Death-rates from the principal Zymotic diseases, per 1,000 living, during 1908, in England and Wales, were as follows:—

England and Wales	1.29
76 Great Towns	1.59
142 Smaller Towns	1.26
England and Wales (less the 218 Towns)	0.99

TABLE XXIII.

	33 Large Towns.	Black- burn.
Seven Zymotic Diseases	1.64	1.77
Smallpox.....	0.00	0.00
Measles	0.29	0.11
Scarlet Fever	0.07	0.14
Whooping Cough	0.30	0.19
Typhoid Fever ..	0.08	0.10
Diarrhœa and Epidemic Enteritis	0.70	1.12
Diphtheria	0.15	0.08

Regarding the Zymotic Diseases which are compulsorily notifiable, it will be seen, on reference to Table XXV., that 872 notifications were sent to me during 1908. This is less by eight than the number received during 1907.

Of these 872 notifications, 595, or 68.2 per cent., were Scarlet Fever.

The next most frequently notified diseases were, in order : Diphtheria, Enteric Fever, Erysipelas, and Puerperal Fever.

Regarding the age-periods of these 872 notifications, 440 occurred between the ages of five and 15 years, and 224 between the ages of one and five years.

The majority of the notifications above the age of 25 years were Erysipelas.

The greatest amount of notifiable infection occurred in St. Andrew's Ward, and the least amount in St. Peter's Ward.

The following power was obtained in the Blackburn Corporation Act of 1908, with reference to infectious diseases :—

Section 64.

If the Medical Officer of Health shall at any time receive notice of a case of infectious disease he may apply to the person who is required by Section 3 of the Infectious Disease (Notification) Act, 1889, to send a notice of the case of infectious disease for the name and address of any laundryman to whom any clothes or other things may from time to time during the continuance of the infectious disease be sent for washing or mangling from the house in which the case of infectious disease exists, and such person shall forthwith furnish such information accordingly. Any person who offends against this enactment shall for every such offence be liable to a penalty not exceeding five pounds.

Section 65.

(1) The occupier of any building in the Borough which is used for human habitation and in which there is or has been any persons suffering from a dangerous infectious disease shall, on the application of the Medical Officer of Health at any time during the illness of such person, or within six weeks from the occurrence of such illness, furnish such information within his knowledge as the Medical Officer of Health may reasonably require for the purpose of enabling measures to be taken to prevent the spread of the disease.

(2) Any occupier knowingly furnishing false information shall be liable on summary conviction to a penalty not exceeding forty shillings.

(3) "Occupier" shall have the same meaning as in the Infectious Disease (Notification) Act, 1889.

Section 66.

If any person shall at the request of the Corporation or of the Medical Officer of Health stop his employment for the purpose of preventing the spread of infectious disease, the Corporation shall make compensation to him for any loss he may sustain by reason of such stoppage.

NOTIFICATION FEES.

The total cost in fees paid to medical men for notifying cases of infectious diseases during 1908 was £120 16s.

TABLE XXIV.

Shewing number of cases of Infectious Diseases notified from 1890 to 1908.

Disease.	1890	1891	1892	1893	1894	1895	1896	1897	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908
Smallpox .....	...	...	4	79	13	...	...	...	...	23	...	49	92	2	4	...	1	...	...
Scarlet Fever...	324	196	176	190	156	224	287	185	347	615	1476	1117	494	339	458	1578	849	544	595
Diphtheria.....	5	1	3	2	38	31	25	15	77	229	334	284	83	132	60	157	166	150	100
Enteric Fever	121	106	79	161	129	119	143	179	228	233	163	131	127	97	111	90	82	61	85
Typhus ... . .	...	...	...	1	...	...	...	1	...	1	...	...	...	...	...	...	...	...	...
Cholera .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Total	450	303	262	432	336	375	455	380	652	1078	1996	1532	753	660	631	1829	1097	756	780

TABLE XXV.

Cases of Infectious Disease notified during the Year 1908

NOTIFIABLE DISEASE.	Cases notified in whole District.						Total Cases notified in each Locality.										Number of Cases removed to Hospital from each Locality.										Total Cases removed to Hospital.									
	At Ages—Years.						St. Stephen's	Trinity	St. Michael's	St. John's	St. Silas	St. Paul's	St. Peter's	St. Mary's	St. Matthew's	St. Thomas' Park	St. Luke's	St. Mark's	St. Andrew's	St. Stephen's	Trinity	St. Michael's	St. John's	St. Silas	St. Paul's	St. Peter's		St. Mary's	St. Matthew's	St. Thomas	Park	St. Luke's	St. Mark's	St. Andrew's		
	At all Ages	Under 1	1 to 5	5 to 15	15 to 25	25 to 65																													65 and upwards	
Small-pox .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Cholera .....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Diphtheria	100	1	32	51	9	7	...	7	2	4	6	4	10	3	4	1	5	3	8	3	7	6	...	...	...	...	...	...	...	...	...	...	...	...	...
Membranous Croup	81	1	1	4	4	62	9	2	4	6	4	4	10	3	4	7	7	6	6	6	11	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Erysipelas	595	4	183	359	35	14	...	51	42	57	41	36	19	14	18	32	35	22	37	44	147	6	29	46	31	14	11	13	18	26	30	16	30	31	101	432
Scarlet Fever.....	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Typhus Fever	85	...	8	26	16	35	...	4	4	6	9	4	3	3	3	10	10	7	6	2	14	3	3	4	6	2	2	3	2	8	5	6	2	10	62	
Enteric Fever
Relapsing Fever
Continued Fever
Puerperal Fever	11	...	...	...	4	7	...	1	...	1	...	2	...	...	...	...	1	2	...	...	4	...	...	...	...	...	...	...	...	...	...	...	...	...	...
Plague.....
TOTALS	872	6	224	440	68	125	9	65	52	74	68	68	46	24	26	54	57	45	52	59	182	41	34	53	43	20	19	19	21	38	37	26	39	34	112	516

MEASLES.

Four hundred and nineteen Cases of Measles were reported from the Schools during the year, compared with 864 cases during 1907, 713 cases during 1906, and 1,003 during 1905.

The reported cases and deaths occurred in the months in the following numbers :—

	January	February	March	April	May	June	July	August	September	October	November	December
Cases Reported ...	15	9	3	2	9	4	14	...	19	69	194	81
Deaths .....	..	...	1	...	...	...	..	1	..	3	2	8

In 1896 there were 3 cases notified to each death.

.. 1897	..	13	..	..
.. 1898	..	9	..	..
.. 1899	..	17	..	..
.. 1900	..	24	..	..
.. 1901	..	15	..	..
.. 1902	..	15	..	..
.. 1903	..	18	..	..
.. 1904	..	40	..	..
.. 1905	..	24	..	..
.. 1906	..	11	..	..
.. 1907	..	19	..	..
.. 1908	..	28	..	..

DEATHS IN AGE PERIODS.

0 to 1	1 to 5	5 to 10	10 to 15	Total
4	10	1	—	15

It will therefore be seen that Measles was less prevalent and less fatal during 1908 than during several previous years. In fact the death-rate from Measles was lower than it had been since the year 1894.

The majority of the cases occurred during October, November, and December, and the worst of these three months was November.

The Death-rate from Measles during 1908 was 0.11 as compared with 0.33 during 1907.

As usual, the greatest number of deaths occurred between the ages of one and five years.

Only one death was certified from this cause above the age of five years.

The usual preventive measures, described in previous reports, were adopted throughout the year.

Inquiries were also made as to the number of Measles cases which were attended by medical men.

221 cases were visited by my Inspectors, so that this disease could be investigated.

It was found that 113 were attended by a medical man, or 51.1 per cent.

The remaining 108 had no medical attendant.

The following Schools were closed during the year 1908, on account of Measles :—

Dec. 11—St. Matthew's Infant, closed until after Xmas
Holidays on account of Measles.

„	11—St. Joseph's	„	„	„	„
„	11—St. Barnabas's	„	„	„	„
„	11—Maudsley Street	„	„	„	„
„	11—Audley Range	„	„	„	„
„	11—Furthergate	„	„	„	„
„	11—Accrington Road	„	„	„	„
„	11—Princes Street	„	„	„	„
„	11—St. Thomas's	„	„	„	„
„	11—Wensley Fold Infant, closed until after Xmas Holi- days as a preventive measure against Measles.				

DEATHS AND DEATH RATES FROM MEASLES
1871—1908.

TABLE XXVI.

Year	Total Deaths	Death Rate	Year	Total Deaths	Death Rate
1871	61	0·8	1890	15	0·1
1872	31	0·3	1891	173	1·4
1873	119	1·4	1892	8	0·06
1874	142	1·7	1893	140	1·1
1875	29	0·3	1894	13	0·01
1876	167	1·9	1895	324	2·5
1877	48	0·5	1896	36	0·2
1878	25	0·2	1897	143	1·0
1879	37	0·3	1898	50	0·38
1880	74	0·7	1899	40	0·29
1881	9	0·08	1900	76	0·55
1882	167	1·5	1901	94	0·72
1883	1	0·009	1902	77	0·58
1884	92	0·8	1903	53	0·40
1885	1	0·009	1904	60	0·45
1886	195	1·7	1905	42	0·31
1887	76	0·6	1906	63	0·47
1888	117	1·0	1907	45	0·33
1889	188	1·6	1908	15	0·11

SCARLET FEVER.

The number of cases notified during the year was 595, compared with 544 cases during 1907, 849 during 1906, and 1,578 during 1905.

The following were the cases and deaths in age periods during 1908 :—

Age period	0-1	1-5	5-10	10-15	15-20	20-25	25-35	35-45	45 & up.
Cases ...	4	183	267	92	22	13	10	4	...
Deaths ..	1	12	4	2			1	...	...

As in previous years, these figures show :

- (1) That during 1908 the incidence and mortality from Scarlet Fever below the age of one year were small.
- (2) That this disease is most prevalent between the ages of one and five and five and ten years (450 cases out of 595 cases, or 75.6 per cent.).
This is usually the case with Scarlet Fever.
- (3) That also between the two last-named age-periods the greatest number of deaths occurred (16 deaths out of 20 deaths from this disease, or 80.0 per cent.).
- (4) That there is a diminished incidence and mortality after the age of ten years.

The following are the cases arranged in months and quarters for 1908, and compared with similar cases for 1907 :—

	Jan.	Feb.	Mar.	April	May	June
1908 :	37 ... 43 ... 30 ... 40 ... 38 ... 58					
1907 :	60 ... 41 ... 36 ... 44 ... 41 ... 48					

	July	Aug.	Sept.	Oct.	Nov.	Dec.
1908 :	65 ...	44 ...	37 ...	58 ...	55 ...	90
1907 :	52 ...	30 ...	44 ...	49 ...	55 ...	44

	First Quarter.	Second Quarter.	Third Quarter.	Fourth Quarter.
1908 :	110	136	146	203
1907 :	137	133	126	148

It will be noticed that Scarlet Fever increased considerably during the Fourth Quarter of the year.

The percentage of cases of this disease removed to the Hospital in the different months were as follows :—

Jan.	Feb.	March	April	May	June
62.1 ...	74.4 ...	73.3 ...	52.5 ...	55.2 ...	82.7
July	Aug.	Sept.	Oct.	Nov.	Dec.
80.0 ...	77.2 ...	83.7 ...	75.0 ...	80.0 ...	67.7

Also the number of cases in individual houses was as follows :—

In 1 house there were 6 cases.

.. 8 houses 4 .. in each house.

.. 20 3

.. 75 2

.. 335 was 1 case

11 Cases occurred in the Infirmary.

1 Case occurred in No. 1 Cottage Home, Queen's Park Road.

No milk supply had any effect in causing the disease to spread during the year.

The usual preventive measures were adopted in every case of Scarlet Fever which was notified during the year, and have been fully described in my Annual Report for 1905.

Scarlet Fever is a disease which is always present to a greater or less degree in all large towns, and as is well known it becomes very prevalent every five or six years.

Although very close inquiry is made in each case notified with the object of finding the source of infection, this is a very difficult matter to do successfully.

It is probable that an explanation may be found in the fact that certain people carry the germs of this disease, who may themselves be quite well, or who may be suffering from the disease in a mild, unrecognisable form.

As is well known, the germ of Scarlet Fever has not yet been discovered, and so the usual measures relating to isolation and bacteriological examination of contact cases, are less successful than they are in such a disease as Diphtheria, in which the germs of that disease may be detected in apparently healthy persons, which thus render further preventive steps possible.

The following Table indicates the weekly and daily average number of notifications of Scarlet Fever throughout the year.

TABLE XXVII.
Analysis of Cases of Scarlet Fever.

Week Ending	No. of Cases Notified Weekly	Total Cases Notified during Year	Average Cases Notified Weekly	Average Cases Notified Daily	Week Ending	No. of Cases Notified Weekly	Total Cases Notified during Year	Average Cases Notified Weekly	Average Cases Notified Daily
Jany. 4	14	14	14.0	3.5	July 4	11	260	9.6	1.4
„ 11	11	25	12.5	2.2	„ 11	16	276	9.8	1.4
„ 18	9	34	11.3	1.8	„ 18	14	290	10.0	1.4
„ 25	6	40	10.0	1.6	„ 25	20	310	10.3	1.5
Feby. 1	10	50	10.0	1.5	Aug. 1	14	324	10.7	1.5
„ 8	14	64	10.0	1.6	„ 8	15	339	10.6	1.5
„ 15	8	72	10.0	1.5	„ 15	5	344	10.4	1.5
„ 22	6	78	9.7	1.4	„ 22	15	359	10.5	1.5
„ 29	13	91	10.0	1.5	„ 29	4	363	10.3	1.5
Mar. 7	3	94	9.4	1.4	Sept. 5	6	369	10.2	1.4
„ 14	6	100	9.0	1.3	„ 12	10	379	10.2	1.4
„ 21	10	110	9.1	1.3	„ 19	12	391	10.3	1.4
„ 28	8	118	9.0	1.3	„ 26	7	398	10.2	1.4
April 4	8	126	9.0	1.3	Oct. 3	10	408	10.2	1.4
„ 11	11	137	9.1	1.3	„ 10	12	420	10.2	1.4
„ 18	10	147	9.1	1.3	„ 17	17	437	10.4	1.5
„ 25	11	158	9.3	1.3	„ 24	12	449	10.4	1.5
May 2	6	164	9.1	1.3	„ 31	16	465	10.5	1.5
„ 9	14	178	9.3	1.3	Nov. 7	12	477	10.6	1.5
„ 16	3	181	9.0	1.3	„ 14	10	487	10.5	1.5
„ 23	5	186	9.0	1.3	„ 21	13	500	10.6	1.5
„ 30	13	199	9.0	1.3	„ 28	20	520	10.8	1.5
June 6	14	213	9.2	1.3	Dec. 5	17	537	10.9	1.5
„ 13	16	229	9.5	1.3	„ 12	22	559	11.1	1.6
„ 20	8	237	9.4	1.3	„ 19	25	584	11.4	1.6
„ 27	12	249	9.5	1.4	„ 26	1	595	11.0	1.6

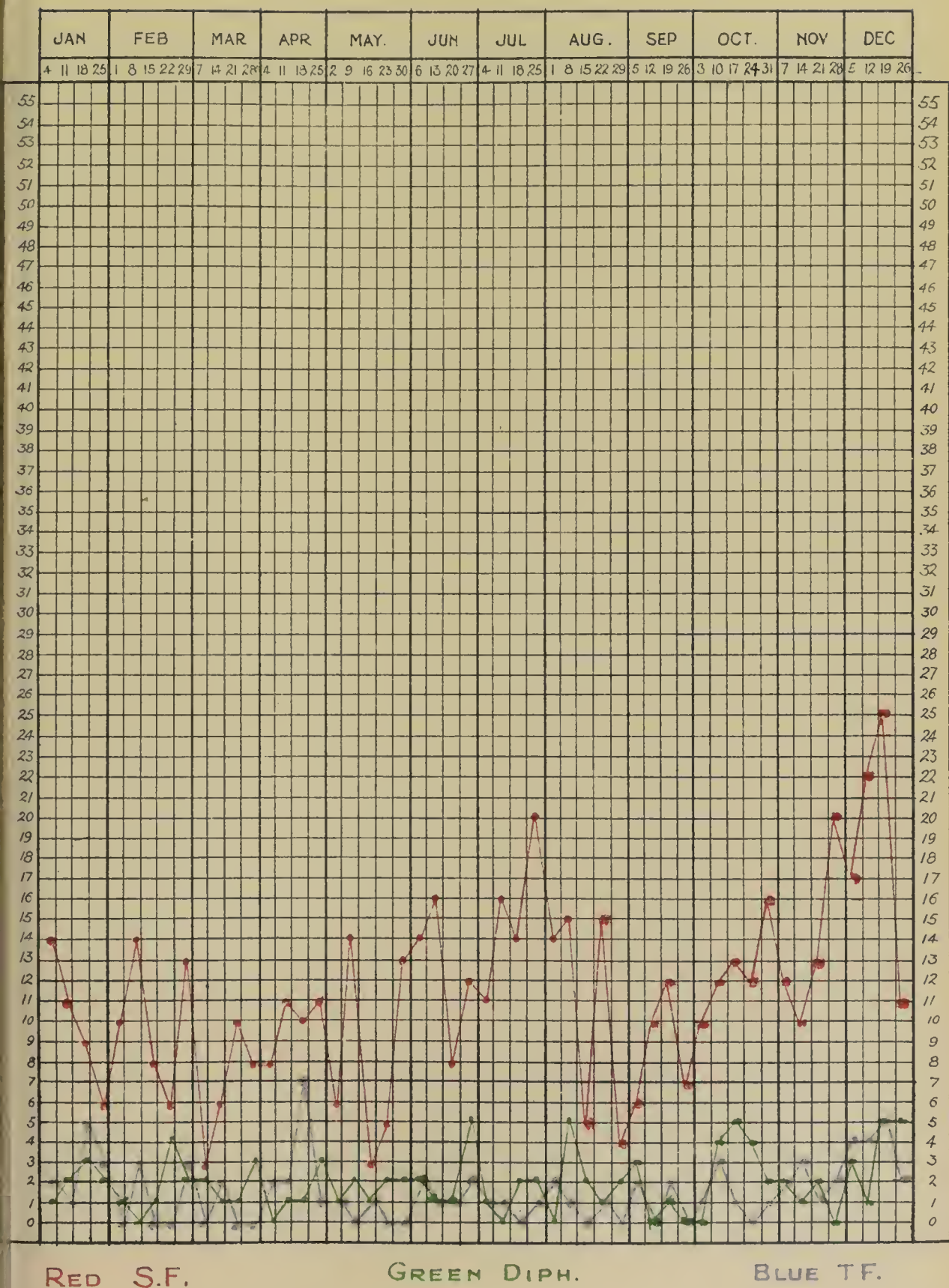
SCARLET FEVER.

TABLE XXVIII.

Year.	Cases notified.	Deaths.	Mortality per 1,000 population.
1875	.....	57	·68
1876	.....	21	·24
1877	.....	38	·42
1878	.....	345	3·59
1879	.....	175	1·77
1880	.....	74	·72
1881	103	23	·22
1882	331	47	·44
1883	275	41	·38
1884	211	45	·41
1885	181	23	·20
1886	422	26	·23
1887	1695	157	1·38
1888	829	175	1·51
1889	737	123	1·05
1890	324	32	·26
1891	196	13	·10
1892	176	13	·10
1893	190	4	·03
1894	156	10	·07
1895	224	8	·06
1896	287	9	·06
1897	185	7	·05
1898	347	16	·12
1899	615	14	·10
1900	1476	83	·65
1901	1117	58	·45
1902	494	31	·23
1903	339	13	·09
1904	458	13	·09
1905	1578	76	·57
1906	849	33	·24
1907	544	21	·15
1908	595	20	·14

CHART 2.

Infectious Diseases.



TYPHOID OR ENTERIC FEVER.

The number of cases notified during the year was 85, compared with 61 during 1907, 82 during 1906, and 90 during 1905.

There were 14 deaths compared with 13 during 1907, 14 during 1906, and 15 during 1905.

The cases and deaths occurred in the following age-periods :—

Age-Periods.	Cases Notified.	Deaths.	Case Mortality Per Cent.
0—1	0	0	0.0
1—2	1	0	0.0
2—3	1	1	100.0
3—4	6	0	0.0
4—5	0	0	0.0
5—6	5	0	0.0
6—7	1	0	0.0
7—8	2	0	0.0
8—9	2	0	0.0
9—10	3	0	0.0
10—15	13	1	7.6
15—20	10	1	10.0
20—25	6	2	33.3
25—35	17	2	11.7
35—45	13	5	38.4
45—55	4	2	50.0
55 and up.....	1	0	0.0
<hr/>			
Total	85	14	16.4

Out of these 85 cases notified during 1908, seven had eaten mussels, seven had eaten cockles, and one had eaten oysters.

There was no reason to believe that the consumption of shellfish had aided in the spread of Typhoid Fever in Blackburn during the year 1908.

The districts in which these 85 cases occurred will be seen by reference to the map at the end of the Report.

The drains at the 60 houses where these 85 cases occurred were tested. Defects were found at 31 houses, and steps were taken immediately to remedy the same.

The type of sanitary convenience at the infected houses was as follows :—

Water Closets.		Tub Closets.	Middens.
Fresh Water.	Slop Water.		
30	6	23	1

ANALYSIS OF MILK SUPPLIES.

44 milk supplies with 1 case of Enteric in each supply.

5	..	..	..	2 cases	..	..	..
1	..	..	..	5 ..	..	..	..

ANALYSIS OF WATER SUPPLY.

Fishmoor Reservoir.	Guide Reservoir.	Audley Reservoir.
65	6	14

The difficulty in tracing isolated cases of this disease to their source is well known to Medical Officers of Health. This difficulty is increased by the fact that a person who has suffered from Typhoid Fever, can spread infection for longer or shorter periods after he has recovered clinically.

Such cases are called “carrier cases,” and are of considerable importance in affording a possible explanation of the occurrence of isolated cases in which the cause has been regarded obscure hitherto.

The German observers divide “carriers” into two classes :

- (1) "Acute carriers," who have shown no symptoms, but, after being in direct contact with patients, may carry and excrete bacilli for a short time and in small numbers.
- (2) "Chronic carriers," who have, a short or a long time before, gone through a regular attack of typhoid and may excrete, for months or years, more or less pure cultures of typhoid bacilli.

The "chronic carriers" are the most dangerous cases, and it has been stated that about 4 per cent. of typhoid patients appear to become carriers; the condition is most common in women, and the bacilli are apparently harboured in the bile in the gall-bladder, or in the intra-hepatic bile passages, whence intermittently they are discharged and excreted with the fœces.

Dr. Davies, the Medical Officer of Health for Bristol, has been the first to record outbreaks in England traced to the influence of a typhoid "carrier." He has shown that when these chronic carriers are engaged in the preparation of food, or in dairy work, they are apt to give rise to intermittent local outbreaks of typhoid fever, probably by contamination of the food with the hand after defæcation or micturition.

In the outbreak described by Dr. Davies the infection was carried by milk.

TABLE XXIX.

ENTERIC FEVER IN WARDS AND QUARTERS.

(NOTIFICATIONS).

Wards.	1st Quarter	2nd Quarter	3rd Quarter	4th Quarter	Totals
St. Stephen's	0	0	0	4	4
Trinity	0	2	0	2	4
St. Michael's .. .	0	1	2	3	6
St. John's	3	1	4	1	9
St. Silas'	2	0	1	1	4
St. Paul's	0	0	1	2	3
St. Peter's	0	2	0	1	3
St. Mary's	0	1	0	2	3
St. Matthew's .. .	1	3	2	4	10
St. Thomas'	3	1	0	6	10
Park	2	5	0	0	7
St. Luke's	2	1	1	2	6
St. Mark's	0	0	0	2	2
St. Andrew's	5	3	1	5	14
Totals	18	20	12	35	85

The monthly notifications of this disease during 1908 were as follows :—

Jan.	Feb.	March	April	May	June
10	6	2	13	1	7
July	Aug.	Sept.	Oct.	Nov.	Dec.
3	4	5	5	11	18
Total, 85.					

One hundred and eighteen Specimens of Blood were examined during the year for Typhoid Bacilli, with the following results :—

Positive	36
Negative	67
Doubtful	7
Incomplete	5
Insufficient Blood Sent	3

The Cases notified in the four quarters for the years 1899 to 1908 were as follows :—

	First Quarter.	Second Quarter.	Third Quarter.	Fourth Quarter.
1899 ...	84	26	42	81
1900 ...	34	25	27	77
1901 ...	35	24	29	43
1902 ...	33	26	18	50
1903 ...	39	23	16	19
1904 ...	26	15	13	57
1905 ...	20	18	10	42
1906 ...	25	11	3	43
1907 ...	20	10	12	19
1908 ...	18	20	12	35

Therefore the fourth quarter of the year has generally had the heaviest incidence of Enteric Fever.

The following Table shows the number of cases notified and the deaths from Enteric Fever in Blackburn since the year 1881.

Attention may be drawn to the fact that since 1902 there has been a marked diminution in the incidence and mortality from this disease.

The following power was obtained in the Blackburn Corporation Act of 1908 with reference to prevention of infection arising from the sale of oysters.

Section 70.

In case the Medical Officer of Health is in possession of evidence that any person in the Borough is suffering from infectious disease attributable to oysters or other shell-fish brought from any particular oyster bed or place and sold within the Borough, or that the consumption of oysters or other shell-fish brought from any particular oyster bed or place and sold within the Borough is likely to cause infectious disease to any person residing in the Borough, he shall report thereon to the Corporation, and the Corporation may thereupon give notice to the vendor to appear before them within such time not less than twenty-four hours, as may be specified in the notice, to show cause why an order should not be made requiring him not to sell oysters or other shell-fish brought from the oyster bed or place or places mentioned in the notice until such order has been withdrawn by the Corporation, and if in the opinion of the Corporation he fails to show such cause, then the Corporation may make such order as aforesaid and shall forthwith give notice of the facts to the Local Government Board.

An order made by the Corporation under this section shall be forthwith withdrawn on the Corporation or the Medical Officer of Health on their behalf being satisfied that the cause of infection has been removed.

Any person selling any oysters or other shell-fish within the Borough in contravention of an order under this section shall be liable to a penalty not exceeding five pounds. Provided that no vendor of oysters or other shell-fish shall be liable to an action for breach of contract if the breach be due to an order of the Corporation under this section.

Offences under this section may be prosecuted and penalties may be recovered by the Corporation before a Petty Sessions Court having jurisdiction in the place where the oyster bed is situate or the offence is committed. and not otherwise.

ENTERIC FEVER.

TABLE XXX.

Year	Cases Notified.	Deaths.	Mortality per 1,000 Population.
1880	...	43	41
1881	289	68	65
1882	210	50	47
1883	442	84	78
1884	268	67	61
1885	130	28	25
1886	105	34	30
1887	153	41	36
1888	146	39	33
1889	111	20	17
1890	121	37	31
1891	106	24	19
1892	79	32	26
1893	161	27	22
1894	129	32	26
1895	119	28	22
1896	143	33	26
1897	179	35	28
1898	228	30	23
1899	233	40	31
1900	163	30	23
1901	131	17	13
1902	127	23	17
1903	97	15	11
1904	111	21	15
1905	90	15	11
1906	82	14	10
1907	61	13	09
1908	85	14	10

The following Table gives particulars of all the cases of Enteric Fever which were notified during the year 1908:—

ENTERIC FEVER.—Table XXXI.

Closet
Accommodation

No.	Age.	Days ill before notification after 1st case.	Cases of Typhoid occurring in same house after 1st case.	CONDITION OF						Other Remarks.	
				W.C.	Tub	Asbpic	Slopewater	Yard.	Back road.		Drainage.
1	14	12	..	..	1	...	...	Flagged and cobbled	Paved	Good	
2	34	30	...	1	...	...	...	Common yard Flagged	None	Good	
3	48	21	Another case notified April 30th.	...	...	1	1	Flagged and cobbled	Unpaved	Good	
4	3	21	...	..	1	...	...	Flagged and cobbled	Paved	Good	Two other cases notified same day.
5	9	5	...	1	..	..	..	Flagged	Paved	Good	
6	6	11	...	..	1	...	...	Flagged	Paved	Good	Another case notified same day.
7	3	6	...	1	...	...	...	Flagged	Paved	Good	
8	12	16	...	1	..	..	..	Flagged	Paved	Defective	Another case notified same day.
9	40	7	...	...	...	1	1	Flagged	Paved	Good	
10	23	21	...	...	...	...	...	...	...	...	This case occurred at the Fever Hospital.

Closet Accommodation										Other Remarks.	
No.	Age.	Days ill before notification after 1st case.	Cases of Typhoid occurring in same house	W.C.	Tub.	Ashpit.	Slopwater	CONDITION OF			
								Yard.	Back road.		Drainage.
11	31½	9	...	1	...	...	...	Flagged and cobbled	Paved	Good	
12	23	12	...	1	...	...	...	Flagged and cobbled	Passage cobbled	Defective	
13	28	12	...	1	...	...	...	Flagged	Paved	Defective	
14	44	13	...	...	1	...	...	Flagged	Paved	Defective	
15	7½	11	...	1	...	...	...	Flagged and cobbled	Unpaved	Defective	
16	10	5	another Case notified April 8th	1	...	...	...	Flagged and cobbled	Paved	Defective	
17	38	6	...	1	...	...	...	None	None	Defective	
18	12	16	..	...	1	...	...	Flagged and cobbled	Paved	Good	
19	54	10	...	1	...	...	...	Flagged	Paved	Defective	
20	16	32	...	...	...	...	1	Flagged and cobbled	Paved	Good	

Closet
Accommodation

No.	Age	Days ill before notifi- cation after 1st case.	Cases of Typhoid occurring in same house	W.C.	Tub.	Ashpit.	Slopewater	CONDITION OF			Other Remarks
								Yard.	Back road.	Drainage.	
21	13	2	1	Flagged and cobbled	Paved	Defective	Three more cases same day.
22	21	10	..	1	...	..	..	Flagged	Passage cobbled	Defective
23	17 ¹	22	...	1	...	...	..	Flagged and cobbled	Paved	Defective
24	13	19	Another case notified June 17th.	1	...	...	..	Flagged	Paved	Defective
25	31	9	Another case notified June 30th.	..	1	...	..	Flagged and cobbled	Paved	Good
26	22	13	...	...	1	...	..	Flagged and gardened	Paved	Defective
27	38	28	...	...	1	...	..	Flagged	Paved	Defective
28	37	15	...	1	...	...	..	Flagged	Paved	Good
29	52	9	..	1	...	..	..	Paved	Paved	Defective
30	17	9	...	1	...	...	..	Flagged	Passage flagged	Defective

Closet Accommodation											
No.	Age.	Days ill before notification same house or after 1st case.	Cases of Typhoid occurring in same house	W.C.	Tub.	Asphlt.	Slopewater	CONDITION OF			Other Remarks
								Yard.	Back road.	Drainage.	
40	40	7	...	1	.	...	.	Flagged	None	Good	
41	27	15	...	1	.	...	...	None	Paved	Defective	
42	35	7	...	1	...	...	...	Flagged	Passage Paved	Defective	
43	15	20	...	1	...	...	..	Asphalt	Paved	Good	
44	25	11	...	...	1	...	1	Cobbled	Paved	Good	
45	31	14	...	1	.	...	...	Flagged	Paved	Defective	
46	37	10	...	...	...	...	1	Flagged and cobbled	Paved	Defective	
47	27	11	...	...	...	.	1	Flagged and cobbled	Paved	Defective	
48	59	11	...	1	...	...	...	Flagged and cobbled	Paved	Defective	
49	36	6	...	2	.	...	...	Flagged	Paved	Good	

Closet
Accommodation

No	Age.	Days ill before notification after 1st case.	Cases of Typhoid occurring in same house	W.C.	Tub.	Ashpit.	Slopwater.	CONDITION OF			Other Remarks.
								Yard.	Back road.	Drainage.	
50	9	16	...	1	flagged	Paved	Defective	This case occurred at the Blackburn Union Workhouse.
51	13	...	...	..	...	...	...	...	...	...
52	26	..	...	..	..	..	..	...	...	..
53	38	6	1	Flagged	Unpaved	Good	This case occurred at the Blackburn Union Workhouse.
54	30	48	another case notified December 12th	..	1	...	...	Garden	Flagged	Defective
55	7	11	...	...	1	...	...	Flagged and cobbled	Paved	Good
56	17 ³ / ₄	8	...	1	Flagged	Paved	Defective	This case occurred at the Blackburn Union Workhouse.
57	8	...	...	..	...	...	...	...	..	...
58	23	10	...	1	...	...	..	Flagged and cobbled	Paved	Defective
59	30	12	..	1	Flagged and cobbled	Passage flagged	Good	

Closet Accommodation											
No.	Age	Days before notification	Cases of Typhoid occurring in same house after 1st case	W. C.	Tub	Ashpit	Stopwater	CON DITION OF			Other Remarks
								Yard	Back Road	Drainage	
60	18½	17	...	...	1	...	...	Paved	Passage Flagged	Good	
61	36	6	...	...	1	...	...	Flagged and Cobbled	Paved	Good	
62	10	11	...	1	...	...	...	Flagged and Cobbled	Paved	Defective	
63	36	5	...	1	...	...	...	Asphalt and Garden	None	Good	
64	21½	15	...	...	1	...	...	Flagged and Cobbled	Paved	Good	
65	3	26	...	...	1	...	...	Flagged and Cobbled	Paved	Good	
66	18	13	...	...	1	...	...	Flagged	Unpaved	Good	Two more cases notified same day.
67	5	..	.	...	...	...	...	...	...	..	This case occurred at the Blackburn Union Work-house.
68	1½	...	...	...	...	...	...	...	...	...	This case occurred at the Blackburn Union Work-house.

DIPHTHERIA AND MEMBRANOUS CROUP.

The number of cases notified during the year was 100, compared with 150 in 1907, 166 in 1906, and 157 in 1905.

There were 12 deaths out of the 100 cases, or a case mortality of 12.0 per cent., compared with a case mortality of 11.3 per cent. during 1907.

The highest incidence and mortality occurred between the ages of one and ten years. Beyond the age of 20 years the incidence was small and the mortality nil.

Fifty-three cases occurred amongst school children.

The following are the Cases and Deaths in age-periods:—

Age Periods in Years.	Notified Cases.		Deaths.	
0—1	1	1	1	1
1—2	8	32	1	6
2—3	11		4	
3—4	7		1	
4—5	6		0	
5—6	10	41	2	4
6—7	12		2	
7—8	4		0	
8—9	9		0	
9—10	6		0	
10—15	10	10	1	1
15—20	5	5	0	0
20—25	4	4	0	0
25—35	5	5	0	0
35 & upwards	2	2	0	0
	<hr/> 100		<hr/> 12	

The following are the Cases arranged in months for the years 1907 and 1908 :—

	Jan.	Feb.	Mar.	Apl.	May	June
1908 :	9	7	7	6	7	10
1907 :	21	19	29	10	9	7

	July	Aug.	Sept.	Oct.	Nov.	Dec.	Totals.
1908 :	4	11	3	15	6	15	100
1907 :	8	9	7	8	14	9	150

The following are the cases of Diphtheria, arranged in the four quarters of the year, since 1899 :—

Year.	1st Quarter	2nd Quarter	3rd Quarter.	4th Quarter
1899	58	25	61	85
1900	92	76	54	112
1901	117	70	55	42
1902	19	17	20	27
1903	56	29	30	17
1904	22	12	7	19
1905	27	29	36	65
1906	51	28	46	41
1907	69	26	24	31
1908	23	23	18	36
Totals	534	335	351	475

Thus the greatest number of cases occurred during the last quarter of 1908, as compared with the first quarter of 1907

These 100 Cases occurred at 92 houses. One Case occurred at the Fever Hospital.

The Drains at all these houses were tested. Defects were found at 60, and steps were taken immediately to remedy the same. Any other insanitary conditions found were also remedied.

The sanitary conveniences at the infected houses were as follows :—

At 57 houses there were water closets.
 „ 7 „ „ slop water closets.
 „ 27 „ „ pail closets.
 „ 1 house there was a privy midden.

Of the Back-yards at these houses :

46 were flagged.
 3 were part flagged.
 18 were flagged and cobbled.
 6 were cobbled.
 8 were flagged and gardened.
 2 were asphalted and gardened.
 4 were asphalted.
 1 was concreted.
 1 was flagged and bricked.
 1 was flagged, cobbled, and bricked.
 1 was bricked.
 1 was flagged, cobbled, and gardened.

Of the Back-roads and passages :

48 were paved.
 9 were flagged.
 4 were cobbled.
 1 was asphalted.
 1 was gravel path.
 21 were unpaved.
 8 houses had no back-road or passage.

At 21 houses the Back-yards were out of repair, and notices were served on the owners to remedy the same.

The following Analysis of the notified cases of Diphtheria in association with a bacteriological examination of throat swabs is interesting :—

The notified cases from which swabs had been taken, and which, on examination, proved to contain Diphtheria Bacilli, were 48. This number includes seven swabs which were taken in order to ascertain if the throats were free from disease.

The notified cases from which swabs had been taken and which, on examination, proved not to contain Diphtheria bacilli, were 7.

The notified cases from which no swab had been taken were 51.

In 48 cases a swab was taken before the case was notified, and of these 41 were positive and 7 were negative.

In 20 cases a second swab was taken before the house was disinfected.

In 37 cases no swab was taken before disinfection.

42 cases were removed to Hospital.

In 4 cases Diphtheria bacilli were found in second and subsequent swabs submitted.

During the year 1908, 268 swabs were taken altogether, apart from those taken at the Fever Hospital.

One case occurred in Hospital which has not been counted in the above figures.

Out of the 100 cases of Diphtheria notified during 1908, anti-toxin was injected in 47 cases.

This is a most valuable remedy, especially when used during the first three days of the illness, and is supplied free by the Corporation, as it is a useful public health preventive measure.

The amount used during the year was 120 bulbs of 4,000 units each, as follows :—

Fever Hospital	43
Medical Men (Police Station)	43
Medical Men (Health Office)	34

TABLE XXXII.

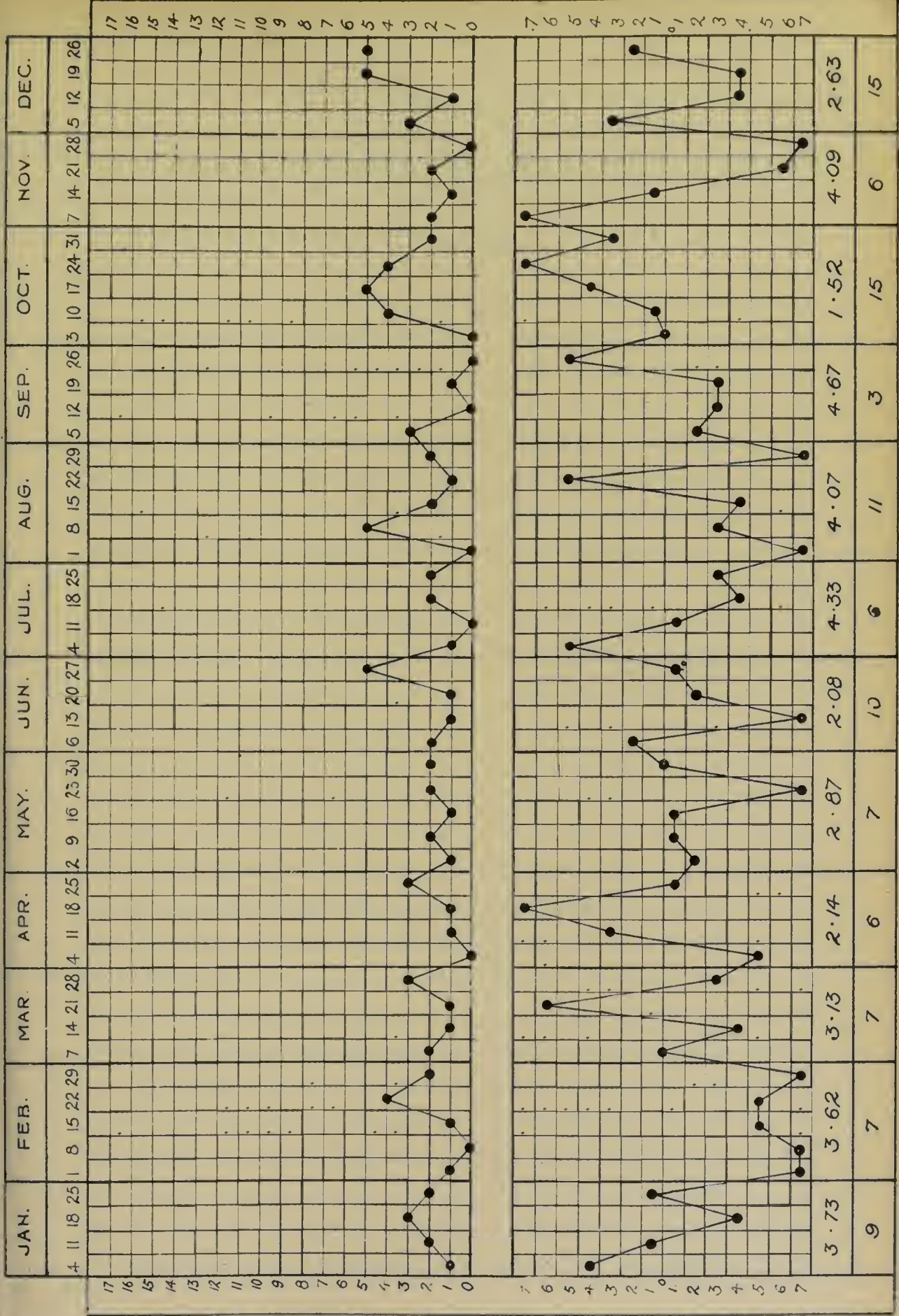
Cases of Diphtheria Notified in Wards.

WARDS.	1900	1901	1902	1903	1904	1905	1906	1907	1908
St. Stephen's..	21	15	4	13	3	9	10	7	7
Trinity	33	23	4	10	6	16	20	13	2
St. Michael's..	22	18	7	3	1	20	19	14	4
St. John's	16	20	2	9	5	16	11	23	14
St. Silas'	11	25	7	32	14	11	9	20	24
St. Paul's	16	15	6	7	3	11	15	6	12
St. Peter's	12	9	9	1	4	6	1	3	4
St. Mary's	29	16	7	2	5	18	14	12	1
St. Matthew's.	48	47	7	3	4	13	12	10	5
St. Thomas' ...	23	18	11	16	...	8	6	12	3
Park	30	17	10	9	5	8	10	10	8
St. Luke's	20	20	2	2	7	5	6	5	3
St. Mark's	27	20	4	9	3	5	6	5	7
St. Andrew's	26	21	3	16	...	11	27	10	6
Totals...	334	284	83	132	60	157	166	150	100

DIPHTHERIA.

TABLE XXXIII.

Year.	Cases Notified.	Deaths.	Mortality per 1,000 Population.
1880	...	...	0'00
1881	.....	...	0'00
1882	.. ...	2	0'01
1883	.. ...	2	0'01
1884	... ..	1	0'009
1885	.....	1	0'009
1886	.. ...		0'00
1887	.. ...	1	0'008
1888	.....	1	0'008
1889	4	4	0'03
1890	5	4	0'03
1891	1	...	0'00
1892	3	1	0'008
1893	3	2	0'01
1894	40	14	0'11
1895	31	7	0'05
1896	25	10	0'08
1897	15	5	0'04
1898	77	32	0'25
1899	229	74	0'58
1900	334	91	0'11
1901	284	62	0'48
1902	83	23	0'17
1903	132	26	0'19
1904	60	11	0'08
1905	157	33	0'24
1906	166	26	0'19
1907	150	17	0'12
1908	100	12	0'08



NOTIFIED
CASES OF
DIPHTHERIA

E

DIRECTION
OF WIND

W

RAINFALL IN
EACH MONTH
CASES OF DIPHTHERIA
IN EACH MONTH.

DIARRHŒA AND EPIDEMIC ENTERITIS.

The number of deaths from Diarrhœa and Epidemic Enteritis was 152.

The deaths from this cause during 1906 and 1907 were 117 and 56 respectively.

When the reading of the 4ft thermometer exceeds 56 degrees Fahrenheit, a condition arises which is probably associated with an increase in the number of Diarrhœa deaths. The condition is also rendered still more favourable for the spread of this disease when flies and dust abound, and when food putrefies rapidly.

As important measures in preventing the occurrence of this disease, I would urge you to complete the abolition of the old-fashioned privy middens, to continue the flagging of back yards, which diminishes soil pollution, and to demolish erections in yards when such are a nuisance.

In this connection also the adoption of educational measures in "infant feeding" and "essentials of domestic hygiene" is absolutely necessary.

A reference to Table VII. will show that most of the deaths from Diarrhœa and Epidemic Enteritis occurred below the age of one year.

I have again made inquiries at houses where deaths from Diarrhœa occurred, according to age, number of days ill before death, occupation of mother, feeding of child, means of storage of milk and food, sanitary accommodation, condition of the yard, condition of the back passage, and structures in the yard.

The following is a summary of the results of these visits:—

As to the number of days the children were ill before death occurred, it was found that—

8	were ill from birth.
4	„ 1 day before death.
4	„ 2 days „ „
4	„ 3 „ „ „
4	„ 4 „ „ „
5	„ 5 „ „ „
4	„ 6 „ „ „
15	„ 7 „ „ „
1	„ 8 „ „ „
2	„ 10 „ „ „
1	„ 11 „ „ „
1	„ 12 „ „ „
8	„ 14 „ „ „
1	„ 15 „ „ „
9	„ 21 „ „ „
1	„ 24 „ „ „
9	„ 28 „ „ „
2	„ 35 „ „ „
3	„ 42 „ „ „
4	„ 2 months „
3	„ 3 „ „
1	„ 5 „ „
58	not ascertained.

As to the occupation of mothers, the following was found :—

33	House duties.
42	Weavers.
9	Winders.
6	Ring-Spinners.
2	Warpers.
10	Cardroom hands.
1	Rover.
1	Shopkeeper.
1	Domestic servant.
1	Firelight-maker.
46	Not ascertained.

As to the method of feeding, it was found that—

- 43 were fed with boat-shaped bottle.
- 25 with long-tube bottle.
- 24 ,, ,, on the breast.
- 5 ,, ,, with spoon.
- 10 .. ,, with breast and boat-shaped bottle.
- 4 ,, ,, with breast and long-tube bottle.
- 41 not ascertained.

The method of keeping the milk was very unsatisfactory in many cases. The milk vessel was rarely covered, and it was also often so placed that it could be contaminated in many ways.

The sanitary conveniences were as follow :—

- At 66 houses there were water-closets.
- .. 80 pail-closets.
- .. 6 privies.

Of the back yards at these houses—

- 96 were flagged.
- 32 were flagged and cobbled.
- 1 was paved.
- 20 were cobbled.
- 1 was flagged and bricked.
- 1 was flagged and gardened.
- 1 was asphalt and gardened.

In six yards there were structures.

Of the back roads and passages—

- 116 were paved.
- 5 were cobbled.
- 4 were flagged.
- 19 were unpaved.
- 8 houses had no back road or passage.

The following are the particulars of the deaths from Diarrhœa, arranged in tabular form :—

TABLE XXXIV.

No.	Age.	Days ill before death.	Work of mother.	If returned to work since birth of child.	Feeding of child at death.	Breast fed how long from birth.	Means of storage of milk and food.	Sanitary accommodation.	Condition of yard.	Condition of back passage.	Structures in yard.
1	2 years	...	...	...	...	...	...	W.C.	Flagged	Paved	No
2	1 month	28 days	Weaver	...	Boat-shape bottle	...	In kitchen	Pail	Flagged	Unpaved	No
3	1 month	5 days	Ring spinner	5 weeks	Breast	All the time	...	Pail	Flagged and cobbled	Paved	No
4	4 months	3 months	Weaver	...	Boat-shape bottle	...	On kitchen shelf	W.C.	Flagged	Paved	No
5	8 days	...	...	...	...	...	...	W.C.	Asphalt and garden	None	No
6	4 years	...	...	...	...	...	...	Pail	Flagged and cobbled	Paved	No
7	8 months	2 months	House duties	...	Breast	All the time	...	W.C.	Flagged	Paved	No
8	7 months	7 days	Winder	...	Cup and spoon	...	On pantry shelf	W.C.	Flagged	Unpaved	No
9	2 years	...	...	...	...	...	...	Privy	Flagged	Paved	No
10	43 years	...	...	...	...	...	...	W.C.	Flagged	Paved	No
11	9 months	3 days	...	...	Boat shape bottle	3 months	On shelf in kitchen	W.C.	Flagged	Paved	No
12	3 months	3 months	House duties	...	Boat shape bottle	2 months	In pantry	W.C.	Flagged	Paved	No

TABLE XXXIV.—continued.

No.	Age.	Days ill before death.	Work of mother.	If returned to work since birth of child.	Feeding of child at death.	Breast fed how long from birth.	Means of storage of milk and food.	Sanitary accommodation.	Condition of yard.	Condition of back passage.	Structures in yard.
13	6 months	10 days	House duties	...	Boat-shaped bottle	...	In kitchen	Pail	Cobbled	Paved	No
14	4 years	...	...	...	...	...	...	Pail	Flagged and cobbled	Paved	No
15	17 months	..	...	...	...	...	...	Pail	Flagged and cobbled	Paved	No
16	15 months	...	...	...	...	..	...	Pail	Flagged and cobbled	Flagged and cobbled	No
17	9 months	5 days	...	...	Breast and boat-shaped bottle	4 months	In kitchen	Pail	Flagged	Paved	No
18	24 days	24 days	Weaver	...	Breast	All the time	...	Pail	Flagged and cobbled	Paved	No
19	10 months	1 month	Winder	...	Long-tube bottle	..	In kitchen	W.C.	Flagged	Paved	No
20	1 month	10 days	Weaver	...	Long-tube bottle	...	In kitchen	W.C.	Flagged	Paved	No
21	75 years	...	...	...	...	...	...	Pail	Flagged	Paved	No
22	1 month	7 days	Weaver	..	Breast	All the time	...	Pail	Flagged	Flagged	No
23	9 months	Removed	...	..	...	...	...	W.C.	Flagged	Paved	No
24	3 months	4 days	Weaver	1 month	Long-tube bottle	..	In scullery	W.C.	Flagged	Paved	No

TABLE XXXIV.—continued.

No.	Age.	Days ill before death.	Work of mother.	If returned to work since birth of child.	Feeding of child at death.	Breast fed how long from birth.	Means of storage of milk and food.	Sanitary accommodation.	Condition of yard.	Condition of back passage.	Structures in yard.
25	9 months	2 months	House duties	...	Breast	All the time	...	Pail	Flagged	Unpaved	No
26	2 years	...	...	...	...	...	...	Pail	Flagged and cobbled	Paved	No
27	1 month	1 month	Weaver	...	Breast	1 month	...	W.C.	Flagged	Paved	No
28	3 months	...	Weaver	...	Breast	All the time	...	Pail	Flagged	Paved	No
29	2 months	2 days	Weaver	...	Breast	All the time	...	W.C.	Flagged	Paved	No
30	4 months	...	Rover	1 month	Breast	All the time	...	W.C.	Flagged	Paved	No
31	6 months	3 weeks	Winder	1 month	Breast and boat-shaped bottle	1 month	Kept on kitchen shelf	Privy	Flagged and cobbled	Paved	No
32	3 months	2 weeks	Weaver	...	Boat-shaped bottle	...	In kitchen on shelf	W.C.	Flagged	Paved	No
33	3 years	...	..	..	...	...	...	W.C.	Flagged	Unpaved	No
34	3 months	...	Weaver	...	Breast	All the time	...	Pail	Cobbled (bad) ;	Paved	No
35	8 months	28 days	House duties	...	Boat-shaped bottle	4 months	Cupboard in kitchen	Pail	Flagged	Paved	No
36	9 months	...	Removed	...	..	...	...	Pail	Flagged and cobbled	Paved	No

No.	Age.	Days ill before death.	Work of mother.	If returned to work since birth of child.	Feeding of child at death.	Breast fed how long from birth.	Means of storage of milk and food.	Sanitary accommodation.	Condition of yard.	Condition of back passage.	Structures in yard.
37	2 months	...	House duties	...	Breast	All the time	...	Privy	Flagged	Paved	No
38	6 months	1 day	Weaver	6 weeks	Boat-shaped bottle	...	In kitchen	W.C.	Flagged	Paved	No
39	7 months	2 days	Weaver	3 months	Boat-shaped bottle	3 months	In kitchen	Pail	Flagged and cobbled	Paved	No
40	2 months	7 days	House duties	..	Long-tube bottle	...	In kitchen	Pail	Flagged	Paved	No
41	18 months	...	...	...	...	...	..	Pail	Flagged	Paved	No
42	5 months	3 days	Cardroom hand	6 weeks	Cup and spoon	6 weeks	In kitchen	W.C.	Flagged	Paved	No
43	13 months	...	...	..	..	...	...	Pail	Flagged and cobbled	Paved	No
44	7 months	5 days	Weaver	1 month	Boat-shape bottle	...	In kitchen	Privy	Flagged	Paved	No
45	2 months	5 days	Weaver	1 month	Boat-shape bottle	1 month	In kitchen	W.C.	Flagged	Paved	No
46	5 months	1 day	Warper	..	Boat-shape bottle	...	On shelf in scullery	W.C.	Flagged	Paved	No
47	4 months	1 day	Shopkeeper	...	Long-tube bottle	1 month	In kitchen	Pail	Flagged and cobbled	Paved	No
48	1 month	...	Weaver	...	Breast	All the time	..	W.C.	Flagged	Paved	No

TABLE XXXIV.—continued.

No.	Age.	Days ill before death.	Work of mother.	If returned to work since birth of child.	Feeding of child at death.	Breast fed how long from birth.	Means of storage of milk and food.	Sanitary accommodation.	Condition of yard.	Condition of back passage.	Structures in yard.
49	2 months	6 days	Winder	5 weeks	Cup and Spoon	1 month	On kitchen shelf	Pail	Flagged and cobbled	Unpaved	No
50	7 months	7 days	House duties	...	Breast and Boat-shape bottle	...	Cupboard in kitchen	W.C.	Flagged	Flagged	Yes
51	1 month	3 weeks	Winder	...	Boat-shape bottle	..	In kitchen	W.C.	Flagged	Unpaved	No
52	4 months	2 days	Weaver	2 weeks	Breast and Boat bottle	..	In kitchen	Pail	Cobbled	Paved	No
53	3 months	...	House duties	...	Boat-shape bottle	...	In kitchen	W.C.	Flagged	Paved	No
54	7 months	14 days	Spinner	...	Boat-shape bottle	...	In kitchen	Pail	Flagged	Paved	No
55	2 months	...	House duties	..	Long-tube bottle	...	In kitchen	Pail	Flagged and cobbled	Cobbled	No
56	2 years	...	...	...	...	...	...	Pail	Cobbled	Cobbled	No
57	8 months	...	Removed	...	...	...	On shelf in scullery	W.C.	Flagged	Unpaved	No
58	5 months	...	House duties	...	Boat-shape bottle	...	...	W.C.	Flagged	Paved	No
59	3 months	...	Weaver	1 month	Cup and spoon	...	In kitchen	Pail	Flagged	Paved	No
60	3 months	4 days	House duties	...	Breast	3 months	...	Pail	Flagged and cobbled	Paved	No

TABLE XXXIV.—continued.

No.	Age.	Days ill before death.	Work of mother.	If returned to work since birth of child.	Feeding of child at death.	Breast fed how long from birth.	Means of storage of milk and food.	Sanitary accommodation.	Condition of yard.	Condition of back passage.	Structures in yard.
61	14 months	...	...	...	...	...	...	W.C.	Flagged	Unpaved	No
62	16 months	...	...	...	...	...	...	W.C.	Flagged	Unpaved	No
63	10 days	...	Removed	...	..	...	...	Pail	Flagged and cobbled	Paved	No
64	5 months	21 days	Weaver	...	...	...	In kitchen	Pail	cobbled	Paved	No
65	77 years	...	...	...	Boat bottle	..	...	W.C.	Flagged	Paved	No
66	5 months	4 days	Cardroom hand	10 weeks	Long-t-bed bottle & cup and spoon	10 weeks	In kitchen	W.C.	Flagged	Paved	No
67	8 months	3 days	Winder	1 month	Boat-shape bottle	...	In kitchen	W.C.	Flagged	Paved	No
68	9 months	7 days	House duties	...	Breast	All the time	...	Pail	Flagged	Paved	No
69	9 months	7 days	House duties	...	Breast	All the time	...	Pail	Flagged	Paved	No
70	15 months	...	...	...	..	...	...	W.C.	Flagged and cobbled	Paved	No
71	1 month	6 days	House duties	...	Boat-shape bottle	...	In scullery	Pail	Flagged	Paved	Yes
72	5 months	3 months	House duties	...	Breast and boat shape bottle	2 months	On shelf in kitchen	Pail	Flagged	Paved	No

TABLE XXXIV.—continued.

No.	Age.	Days ill before death.	Work of mother.	If returned to work since birth of child.	Feeding of child at death.	Breast fed how long from birth.	Means of storage of milk and food.	Sanitary accommodation.	Condition of yard.	Condition of back passage.	Structures in yard.
73	19 months	...	...	...	...	...	...	Pail	Flagged	Paved	No
74	4 months	2 months	House duties	...	Long-tube bottle	1 month	In kitchen	W.C.	Flagged and cobbled	Paved	No
75	20 months	...	...	...	...	...	...	Pail	Flagged and cobbled	Paved	No
76	7 months	6 days	Cardroom hand	6 weeks	Boat-shape bottle	1 month	In kitchen	W.C.	Flagged	Paved	No
77	1 month	7 days	Weaver	1 month	Long-tube bottle	...	In living room	Pail	Flagged	Paved	No
78	19 days	19 days	House duties	...	Boat-shape bottle	9 days	In living room	Pail	Flagged	Paved	No
79	6 months	5 days	Weaver	2 months	Boat-shape bottle	...	In scullery	W.C.	Flagged	Unpaved	No
80	2 years	...	...	...	...	...	...	Pail	Flagged and cobbled	Paved	No
81	4 months	4 weeks	Weaver	...	Breast	All the time	...	W.C.	Cobbled (bad)	Paved	No
82	7 months	Since birth	Weaver	...	Breast	...	...	Pail	Flagged	Paved	No
83	5 months	2 weeks	Domestic servant	...	Hygienic bottle	2 months	In scullery	W.C.	Flagged	Paved	No
84	22 months	...	...	...	...	...	...	W.C.	Flagged and cobbled	Paved (bad)	No

No.	Age.	Days ill before death.	Work of mother.	If returned to work since birth of child.	Feeding of child at death.	Breast fed how long from birth.	Means of storage of milk and food.	Sanitary accommodation.	Condition of yard.	Condition of back passage.	Structures in yard.
85	8 months	2 days	Weaver	3 months	Boat-shape bottle	3 months	In kitchen	W.C.	Flagged and cobbled	Unpaved	No
86	1 month	14 days	Cardroom hand	...	Breast	All the time	...	Pail	Cobbled	Unpaved	No
87	5 months	3 months	Weaver	...	Boat-shape bottle	3 months	...	Pail	Cobbled (bad)	Unpaved	No
88	5 months	...	House duties	...	Long-tube bottle	...	On shelf in pantry	W.C.	Flagged	Unpaved	No
89	3 years	...	...	...	...	...	...	W.C.	Flagged	Paved	No
90	6 months	...	House duties	...	Breast	All the time	...	W.C.	Flagged	None	No
91	4 months	4 months	House duties	...	Long-tube bottle	2 months	In living room	Pail	Flagged and cobbled	Paved	No
92	14 days	14 days	Ring spinner	...	Long-tube bottle	...	In living room	Pail	Partly flagged	Unpaved	No
93	6 months	3 weeks	...	...	Boat-shape bottle	...	In living room	Pail	Flagged	Paved	No
94	12 months	...	...	...	...	...	..	Pail	Flagged	Paved	No
95	13 months	...	...	...	...	...	...	W.C.	Flagged and cobbled	Paved	No
96	9 months	2 months	Weaver	6 weeks	Boat-shape bottle	...	In kitchen	W.C.	Partly flagged	Paved	No

TABLE XXXIV.—continued.

No.	Age.	Days ill before death.	Work of mother.	If returned to work since birth of child.	Feeding of child at death.	Breast fed how long from birth.	Means of storage of milk and food.	Sanitary accommodation.	Condition of yard.	Condition of back passage.	Structures in yard.
97	5 months	1 month	Ring spinner	1 month	Boat-shape bottle	1 month	In kitchen	Pail	Cobbled	Paved	Yes
98	18 months	...	...	...	...	...	...	Pail	Cobbled	None	No
99	8 days	8 days	...	...	Long tube bottle	...	In kitchen	Privy	Flagged and gardened	None	No
100	4 months	1 day	Weaver	2 months	Boat-shape bottle and breast	2 months	In kitchen	Pail	Flagged	Paved	No
101	12 days	12 days	Weaver	...	Boat-shape bottle	...	In kitchen	Pail	Flagged	Cobbled	No
102	5 months	2 weeks	Weaver	6 weeks	Breast and long-tube bottle	1 month	In kitchen	Pail	Cobbled (bad)	Paved	Yes
103	1 month	7 days	Weaver	1 month	Breast	All the time	...	Pail	Flagged	Paved	No
104	2 months	...	Spinner	...	Breast and long-tube bottle	1 month	In kitchen	Pail	Flagged	Paved	No
105	5 months	12 days	Winder	2 months	Long-tube bottle	2 months	In kitchen	Pail	Flagged and cobbled	Paved	No
106	6 years	...	...	...	...	...	...	Pail	Flagged	Paved	No
107	4 months	5 weeks	House duties	...	Breast and Boat-shape bottle	2 months	In scullery	Pail	Flagged and cobbled	Paved	No
108	17 months	...	...	...	...	...	...	Pail	Flagged	Paved	No

TABLE XXXIV.—continued.

No	Age	Days ill before death.	Work of mother.	If returned to work since birth of child.	Feeding of child at death.	Breast fed how long from birth.	Means of storage of milk and food.	Sanitary accommodation.	Condition of yard.	Condition of back passage.	Structures in yard.
109	11 months	5 weeks	House duties	...	Breast	All the time	...	Pail	Flagged	Paved	No
110	4 months	2 weeks	Weaver	...	Boat-shape bottle	...	In pantry	Pail	Cobbled	Paved	No
111	5 months	6 weeks	Weaver	...	Long-tube bottle	1 month	In kitchen	W.C.	Flagged	Paved	No
112	6 months	15 days	Weaver	2 months	Long tube bottle	2 months	In kitchen	Pail	Flagged and cobbled	Paved	No
113	15 days	7 days	House duties	...	Boat-shape bottle	...	In scullery	Privy	Cobbled	Unpaved	Yes
114	2 months	7 days	Warper	1 month	Boat-shape bottle and Breast	1 month	In kitchen	Pail	Cobbled	Unpaved	No
115	7 months	...	House duties	...	Boat bottle and Breast	4 months	On scullery shelf	W.C.	Flagged	Paved	No
116	2 months	6 weeks	House duties	...	Boat-shape bottle	...	In kitchen	Pail	Flagged and cobbled	Cobbled	No
117	17 months	...	...	...	...	...	...	Pail	Flagged and cobbled	Paved	No
118	32 years	...	...	...	...	...	...	W.C.	Flagged	Paved	No
119	20 months	...	...	...	...	...	...	W.C.	Flagged	None	No
120	2 months	1 month	Winder	...	Boat-shape bottle	...	In kitchen	W.C.	Flagged	Paved	No

TABLE XXXIV.—continued.

No.	Age.	Days ill before death.	Work of mother.	If returned to work since birth of child.	Feeding of child at death.	Breast fed how long from birth.	Means of storage of milk and food.	Sanitary accommodation.	Condition of yard.	Condition of back passage.	Structures in yard.
121	78 years	...	...	...	...	...	...	Pail	Flagged	Flagged	No
122	4 months	14 days	Weaver	3 months	Boat-shape bottle	3 months	In yard covered over	Pail	Flagged	Paved	No
123	3 months	7 days	Cardroom hand	1 month	Long-tube bottle	1 month	In pantry	W.C.	Flagged	Paved	No
124	2 months	3 weeks	Spinner	2 months	Boat-shape bottle	6 weeks	In kitchen	Pail	Flagged	Paved	No
125	51 years	...	...	...	...	...	...	W.C.	Paved	None	No
126	6 months	7 days	House duties	...	Boat-shape bottle	...	In pantry	Pail	Cobbled	Paved	No
127	12 months	...	...	...	...	...	...	W.C.	Flagged	Paved	No
128	8 months	4 days	Weaver	...	Breast	All the time	...	W.C.	Flagged	Paved	No
129	1 month	7 days	Weaver	...	Boat-shape bottle	...	In kitchen	W.C.	Flagged	Paved	No
130	5 months	5 months	Weaver	...	Long-tube bottle	...	In pantry	W.C.	Flagged	Unpaved	No
131	4 months	6 weeks	Weaver	...	Boat-shape bottle	1 month	In sentlery	Pail	Cobbled	Paved	No

TABLE XXXIV.—continued.

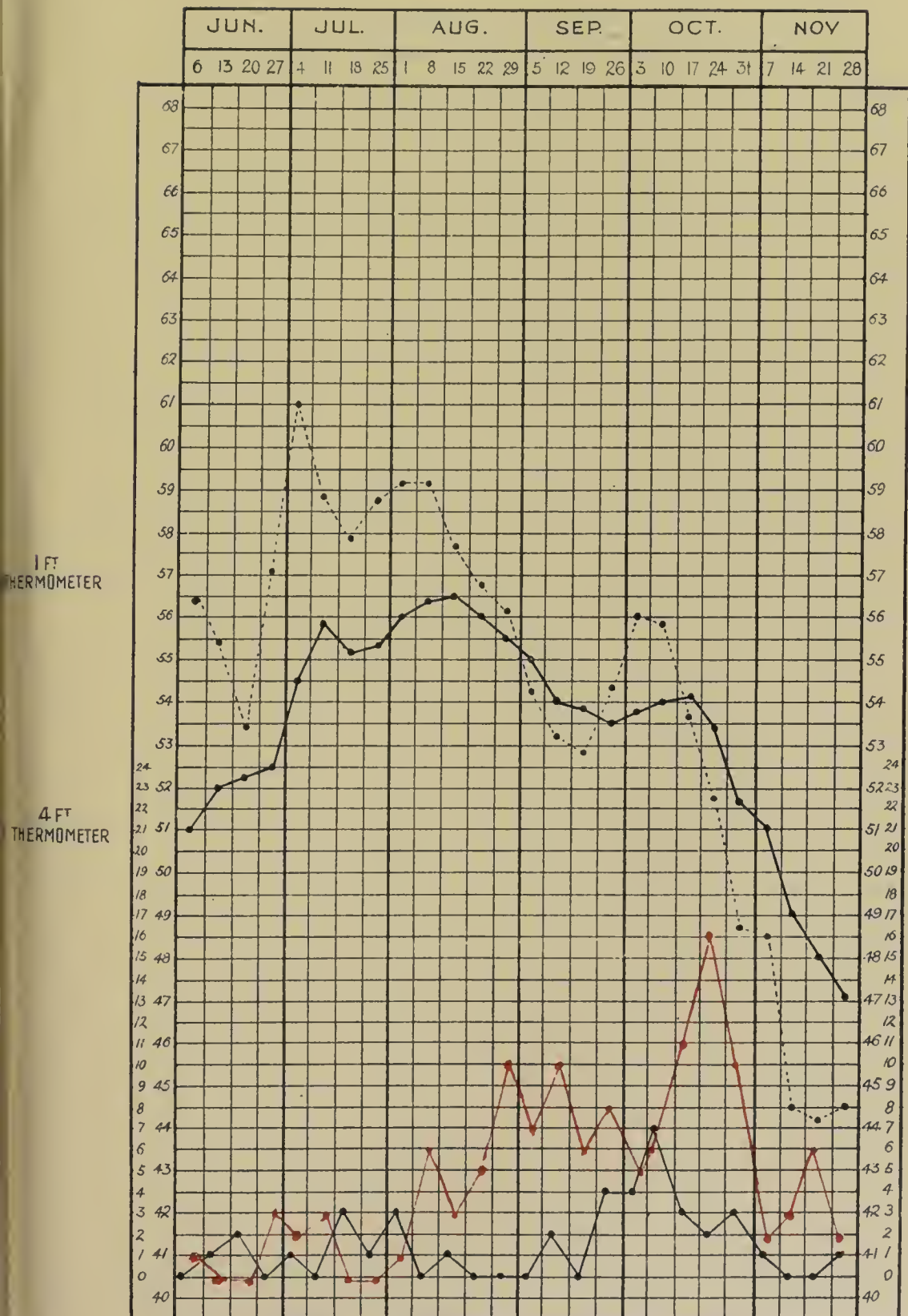
No.	Age.	Days ill before death.	Work of mother.	If returned to work since birth of child.	Feeding of child at death.	Breast fed how long from birth.	Means of storage of milk and food.	Sanitary accommodation.	Condition of yard.	Condition of back passage.	Structures in yard.
132	3 months	3 weeks	Winder	1 month	Breast and long-tube bottle	...	Kitchen in clean jug	Pail	Cobbled	Paved	No
133	14 months	...	...	...	...	...	...	W.C.	Flagged	Unpaved	No
134	9 months	8 days	Cardroom hand	2 months	Long-tube bottle	...	On kitchen table	Pail	Flagged and cobbled	Paved	No
135	3 months	3 weeks	Cardroom hand	2 months	Breast and long-tube bottle	2 months	In scullery	W.C.	Flagged	Paved	No
136	2 months	4 weeks	House duties	...	Boat-shape bottle	...	In kitchen	Pail	Cobbled	Flagged	No
137	7 months	...	Weaver	4 weeks	Long-tube bottle	1 month	In pantry	Pail	Cobbled	Paved	Yes
138	6 months	6 days	Weaver	6 weeks	Long-tube bottle	...	In living place	Pail	Flagged	Paved	No
139	20 months	...	...	...	...	...	...	Pail	Flagged	Paved	No
140	2 months	3 weeks	House duties	...	Boat-shape bottle	2 weeks	On kitchen table	W.C.	Flagged	Paved	No
141	3 months	7 days	Firelight maker	1 month	Long-tube bottle	1 month	In kitchen	W.C.	Flagged	None	No
142	3 months	1 month	House duties	...	Boat-shaped bottle	...	In Kitchen	W.C.	Flagged	Paved	No

TABLE XXXIV.—

No.	Age.	Days ill before death.	Work of mother.	If returned to work since birth of child.	Feeding of child at death.	Breast fed how long from birth.	Means of storage of milk and food.	Sanitary accommodation.	Condition of yard.	Condition of back passage.	Structures in yard.
143	21 months	...	...	...	...	...	...	Pail	Flagged and cobbled	Paved	No
144	8 months	11 days	House duties	...	Boat-shaped bottle	6 months	On shelf in kitchen	Pail	Flagged	Paved	No
145	4 months	4 months	House duties	...	Boat-shaped bottle	1 month	On shelf in kitchen	W.C.	Flagged	Paved	No
146	7 months	2 weeks	Weaver	6 weeks	Boat-shaped bottle	2 weeks	Kitchen table	W.C.	Flagged	Paved	No
147	2 months	3 days	Weaver	6 weeks	Long-tube bottle	1 month	In kitchen	Pail	Flagged	Paved	No
148	13 days	7 days	Cardroom hand	...	Breast	All the time	...	W.C.	Flagged	Paved	No
149	3 months	3 days	House duties	...	Breast	All the time	...	W.C.	Flagged	Paved	No
150	4 months	...	House duties	6 weeks	Long-tube bottle	6 weeks	In kitchen	Pail	Flagged	N n-	No
151	11 months	...	Cardroom hand	3 months	Long-tube bottle	3 months	In kitchen	Pail	Cobbled	Paved	No
152	11 months	...	Cardroom hand	5 weeks	Cup and spoon	5 weeks	In kitchen	W.C.	Flagged	Paved	No

CHART 4.

Diarrhœa.



RED LINE DEATHS 1908
BLACK " " 1907

SMALLPOX.

No case of Smallpox has occurred in Blackburn during the year.

VACCINATION.

I regret that it is again my duty to place on record that the proportion of the population of Blackburn, which will be susceptible when another outbreak of Smallpox occurs, is increasing.

For example, 120 exemptions from vaccination were obtained in the year 1904, 190 in 1905, 305 in 1906, 407 in 1907, and 887 in 1908. To say the least, this increase is alarming.

Moreover, re-vaccination does not appear to be carried out in Blackburn to a great extent, except when there is an epidemic of smallpox.

SMALLPOX.

TABLE XXXV.

Year.	Cases Notified.	Deaths.	Mortality per 1,000 Population.
1880	0	0	'00
1881	28	5	'04
1882	4	0	'00
1883	4	0	'00
1884	0	0	'00
1885	4	0	'00
1886	28	2	'01
1887	42	4	'03
1888	98	10	'08
1889	0	0	'00
1890	0	0	'00
1891	0	0	'00
1892	4	2	'01
1893	79	8	'06
1894	13	0	'00
1895	0	0	'00
1896	0	0	'00
1897	0	0	'00
1898	0	0	'00
1899	0	0	'00
1900	13	2	'01
1901	0	0	'00
1902	49	2	'01
1903	92	3	'02
1904	2	0	'00
1905	4	0	'00
1906	0	0	'00
1907	1	0	'00
1908	0	0	'00

VACCINATION.—For 1890—1908.

TABLE XXXVI.

Year	Births.	Successfully Vaccinated	Died Un- vaccinated	Insus- ceptible	Postponed	Exempted	Removed out of District and traced.	Removed and not traced.
1890	4015	3220	404	6	91	...	...	187
1891	4085	2852	522	7	131	...	...	412
1892	3883	2869	492	13	50	...	...	297
1893	3822	2674	560	23	94	...	...	471
1894	3621	2589	340	21	96	...	...	505
1895	3899	2612	543	20	115	...	...	609
1896	3552	2587	495	59	113	...	...	288
1897	3629	2301	451	17	137	...	...	723
1898	3662	2459	655	3	153	164	...	228
1899	3643	2616	519	9	191	139	51	118
1900	3438	2687	416	8	52	120	56	47
1901	3386	2640	408	18	76	158	19	40
1902	3457	2635	329	13	68	128	20	56
1903	3304	2330	304	20	53	117	24	28
1904	3100	218	353	12	63	120	13	50
1905	3193	2274	290	17	39	190	7	29
1906	3418	2264	337	9	61	305	7	60
1907	3348	1828	311	4	57	407	9	70
1908	3415	1442	349	4	47	887	14	77

VACCINATION RETURNS FOR THE YEAR 1908.

TABLE XXXVII.

MONTH.	Successfully Vaccinated.	Died Unvaccinated.	Exemptions	Postponements.	Removals not traced.	Insusceptible.	Removed and traced out of district.	Unaccounted for not Vaccinated.	Successfully Vaccinated each Quarter.
January	155	28	101	7	6	8	441
February	139	31	76	7	4	...	1	12	
March.....	147	29	79	6	5	...	...	3
April	175	27	81	7	11	2	2	11	491
May.....	164	32	88	9	12	1	1	10	
June	152	29	92	2	9	1	3	11	
July	152	38	94	5	9	...	3	27	380
August	124	38	89	2	10	...	1	30	
September	104	34	71	2	8	...	3	47	
October	81	30	66	...	2	89	130
November	43	20	32	...	1	...	...	134
December	6	13	18	...	...	...	...	213
Totals ...	1442	349	887	47	77	4	14	595	1442

The total number of Exemptions received for the whole of the Union District, year 1907 (474), year 1908 (1781), increase of 1307.

PUERPERAL FEVER.

There were 11 notifications of Puerperal Fever from medical men, including 2 deaths, during 1908, compared with 25 such notifications, including 12 deaths, during 1907.

33 bulbs of Anti-Puerperal Serum were supplied to medical men during the year.

The two Lady Inspectors have inspected the methods used by the midwives of this town during 1908.

The conditions under which midwives work are better than they were two years ago, but there is still very great need and room for improvement. If all of them would only understand and observe practically the one word "cleanliness," a very great advance would have been made. In this respect I do not refer to the midwives who have had a hospital training. I refer to many of the women whose qualification for appearing on the Midwives' Roll is that they were in practice before July, 1901.

Some of these women never will improve in their work.

The following notes represent the work of the two Lady Inspectors in visiting and observing the manner in which the midwives of Blackburn have carried out their duties during 1908. This work on the part of the Lady Inspectors has been carried out in close association with preventive measures against infantile mortality.

The number of midwives on the Blackburn Register at the beginning of 1908 was 58. Six have left the town or ceased to practice, and six have been added to the register during the year.

Of these 58, eleven say they are monthly nurses, and do not attend cases without a doctor.

During 1908, midwives alone were present at 1,519 births, and "handy women" were present at 99 births: 317 cases were attended by both doctor and midwife.

The following statement indicates the total number of cases (130) in which the midwife advised that a Registered Medical Practitioner should be sent for, in accordance with Rule 18.

A—LABOUR :

Presentations—

Occipito-Posterior	2
Shoulder	1
Face	2
Transverse	4
Hand	1
Foot	3
Tedious Labour	31
Abnormal Pelvis	6
Placenta Prævia	2
Accidental Hæmorrhage	1
Threatened or Ruptured Perineum	26
Adherent Placenta	1
Premature Labour	3
Collapse	4
Convulsions	2
Other Conditions	8

B—LYING-IN :

Puerperal Fever	4
Rise of Temperature	3
Mastitis	3
Pleurisy	1

C—CHILD :

Death of Child	1
Ophthalmia	3
Debility	6
Premature Birth	3
Developmental Defects	9

38 still-births were notified by midwives.

The following particulars refer to the methods of practice amongst Blackburn midwives :—

CASE-BOOKS.

The Case-Books were kept in good condition by 18 midwives, and in fair condition by 21 midwives.

Fourteen midwives are illiterate.

Many midwives still do not understand the stages of labour, the presentations, or abnormalities. In this respect, however, there is an improvement compared with the year 1907.

MIDWIFERY BAGS.

Twenty-four midwives kept their bags in good condition, and 15 in fair condition.

Removable linings were used in all the bags except one.

Four midwives have no bag.

Thirty-four midwives have all the appliances and antiseptics required by the Central Midwives' Board.

Five midwives have some of these appliances.

TAKING OF TEMPERATURES.

Twenty-eight midwives take the temperatures of their patients, but 15 are unable to take the temperature. This is an improvement when compared with 1907, but it is far from satisfactory—in fact, in my opinion, it is a condition attended by a considerable amount of danger to the patient.

CLEANLINESS OF MIDWIVES.

Thirty-eight midwives wear washable dresses, and five wear a print blouse and a woollen skirt.

As regards their personal cleanliness, 28 may be described as clean, and 15 as not clean.

The houses of 38 midwives were clean, and the houses of five should be cleaner. In only 11 houses tenanted by midwives is there a bath-room. This is not at all satisfactory, for midwives require baths frequently. I have previously referred to the need for greater care in cleansing the hands and finger-nails by midwives.

KNOWLEDGE OF ANTISEPTICS.

Twenty-seven midwives carry antiseptics, but I regret to say that 16 do not understand their proper use.

There are 11 monthly nurses, who state that they do not attend a confinement without a doctor. They generally live in the house of the patient for a period of one to two months.

Of these, nine have bags, but the majority do not keep case-books, as they say there is no necessity to do so.

They are all clean, careful women, can take and record a patient's pulse and temperature, and all wear print, washable dresses.

A course of six Lectures and Demonstrations has been arranged, and is being given to Midwives by Miss St. Stephens, one of the Lady Inspectors.

The following is the syllabus of the course :—

1. General.
2. Asepsis, Sepsis, and Antiseptics.
3. Continuation of Lecture 2.
4. Mechanism of Labour—passages, passenger, and powers.
Vertex Mechanism explained and demonstrated.

5. Phenomena of Labour—powers, contraction, relaxation, and retraction. Cause and effect of true labour pains.
6. Management of the Three Stages of Labour. '

The Midwives are encouraged to come to the Health Office for advice, and extra tuition constantly.

By such means it is hoped that many of the midwives in the town will carry out their work with greater cleanliness and skill.

The following is a list of Blackburn Midwives corrected to date :

TABLE XXXVIII.

No.	Name.	Address.	Date of Enrolment.	Qualification.
9050	Armer, Emma	98 Accrington Road	1904—Oct. 27	L.O.S., 1900
5626	Backhouse, Ruth	11 Queen's Road	" June 30	In Practice July, 1901
5627	Baylie, Margaret	31 Shorrock Lane	" June 30	" Ditto
5788	Beard, Mary	2 Bright Street	" June 30	Ditto
3810	Bradley, Sarah Jane	44 Saunder's Road	" April 28	L.O.S., November 26, 1903
6235	Collins, Rose Ann	26 Lord Derby Street	1904—July 21	In Practice July, 1901
5628	Conway, Mary Ann	35 Eccles Street	" June 30	Ditto
10257	Corrigan, Mary Ann	11 Henrietta Street	" Nov. 24	Ditto
26684	Counsell, Elizabeth Ellen	59 Riley Street	1908—July 22	St. Mary's Hospital, C.M.B.
5629	Croasdale, Elizabeth Alice	74 Leamington Road	1904—June 30	In Practice July, 1901
18468	Doran, Annie	43 Daisy Street	1905—April 27	In Practice July, 1901
26708	Duckett, Teresa Agnes	8 Woodbury Street	1908—June 23	C.M.B.
10981	Dunwoody, Elizabeth	Union Infirmary	1904—Dec. 22	In Practice July, 1901
13850	Foster, Sarah	8 Hawkshead Street	1905—Feb. 23	Ditto

TABLE XXXVIII.--continued.

No.	Name.	Address.	Date of Enrolment.	Qualification.
6954	Foxcroft, Alice	123 Revidge Road	1904 Sept. 29	In Practice July, 1901
6523	Gabbutt, Mary	187 Downham Street	" July 21	Ditto
6524	Galloway, Selina Ann	72 Duke's Brow.....	" July 21	Ditto
5826	Gee, Margaret	79 Pendle Street	" June 30	Ditto
13099	Gibson, Martha Kathleen	District Nurses Home.....	1905—Feby. 23	C.M.B.
3690	Gleeson, Annie	5 Park Road	1904—April 28	L.O.S., July 10, 1900
11058	Gordon, Ellen	10 Taylor Street	" Dec. 22	In Practice July, 1901
6525	Green, Margaret	51 London Road	" July 21	Ditto
27389	Greenwood, Bridget	24 Emily Street	1908—Dec. 2	St. Mary's Hospital, C.M.B.
10293	Hacking, Annie	14 Brothers Street	1904—Nov. 24	In practice July, 1901.
27393	Hall, Elizabeth A.	Union Workhouse	1908—Nov. 2	C.M.B.
6604	Haworth, Mary.....	98 Haslingden Road	1904—July 21	In practice July, 1901.
5824	Hoghton, Martha Jane	41 Charlotte Street	" June 30	Ditto
7760	Houghton, Mary	42 Anvil Street	1904—Sept. 29	Ditto

TABLE XXXVIII.—continued.

No.	Name.	Address.	Date of Enrolment.	Qualification.
6526	Hummer, Elizabeth	89 Balaclava Street	1904—July 21	In Practice July, 1901
7360	Johnson, Edith Mary	24 Bicknell Street... ..	1904—Sept. 29	Glasgow Maternity Hospital, Aug. 1, 1904
5829	Latham, Elizabeth	40 Pickup Street ..	„ June 30	In Practice July, 1901
5630	Leigh, Elizabeth	91 London Road	„ June 30	Ditto
3819	Lightbown, Margaret	94 Livesey Branch Road ...	„ April 28	St. Mary's Hospital, Manchester, March, 1899
16641	Lonsdale, Hannah ..	15 Oaklands Terrace, Cherry Tree.....	1905—Mar. 23	In Practice July, 1901
16461	McCall, Elizabeth Alice.....	122 London Road	„ Mar. 23	Ditto
6527	Moore, Alice	84 Derby Street.....	„ July 21	Ditto
5650	Newton, Mary	80 Whalley New Road	„ June 30	L.O.S., February 26, 1904
6609	Nixon, Mary Alice ..	37 Goldhey Street	„ July 21	In Practice July, 1901
8593	Ormerod, Nancy	40 Hickory Street... ..	1905—Oct. 27	In Practice, July, 1901
7209	Peacock, Sarah Elizabeth ...	15 Progress Street	„ Sept. 29	Ditto
6072	Pearson, Caroline.....	111 Bonsall Street.....	1904—June 30	Ditto

TABLE XXXVIII.—continued.

No.	Name.	Address.	Date of Enrolment.	Qualification.
26343	Pincock, Ann	359 Bolton Road	1908—	St. Mary's Hospital, Manchester, February 1908. C.M.B.
5830	Riding, Rebecca	63 St. Thomas Street	1904—June 30	In Practice July, 1901
5935	Rimmer, Ellen	76 Artillery Street	„ June 30	Ditto
5936	Sharp, Helen	5 Lodge Street	„ June 30	Ditto
6228	Sherwin, Harriet	18 Johnston Street	„ July 21	Ditto
5938	Speight, Betsy Jane	16 Lord Byron Street	„ June 30	Ditto
27163	Sullivan, Emily.....	Union Workhouse.....	1908 Nov. 2	C.M.B.
8320	Walmsley, Susannah	2a Cob Street	1904 Oct. 7	In Practice July, 1901
6076	Whalley, Jane Ellen	2 Elgee Street	„ June 30	Ditto
6238	Whittaker, Hannah	65 Wall Street	„ July 21	Ditto
6239	Wilson, Annie	40 Inkerman Street	„ July 21	Ditto
22892	Wood, Emma Lucy	63 London Road	1905—Nov. 25	C.M.B.
5631	Wrigley, Mary	108 King Street.....	1904—June 30	In Practice July, 1901
5939	Yates, Mary Alice	102 Newton Street	„ June 30	Ditto

TABLE XXXIX.—DEATHS IN CHILDREN DURING THE LAST TEN YEARS.

	1899	1900	1901	1902	1903	1904	1905	1906	1907	1908
Puerperal Fever	8	10	9	11	5	3	10	5	12	2
Placenta Prævia—Flooding	2	1	4	4	2	4	3	4	1	4
Parturition	7	1	...	...	...	...	...	...	...	...
Puerperal Convulsions ... ..	...	1	5	4	4	...	2	3	...	5
Abortion—Miscarriage	1	...	1	3	2	2	2	1	2	1
Other Accidents of Child Birth... ..	2	1	2	2	12	6	11	2	11	4
Puerperal Mania ... ..	...	...	...	1	...	1	...	...	2	...
Puerperal Thrombosis ... ..	...	...	...	2	...	...	2	3	1	...
	12	4	12	16	20	13	20	13	17	16
Number of Puerperal Cases Notified	13	14	11	18	11	7	24	12	25	11

ERYSIPELAS.

During 1908, 81 cases of Erysipelas were notified, and 3 deaths registered, giving a case mortality of 3.7 per cent.

During 1907, 99 cases were notified and 4 deaths registered.

WHOOPING COUGH.

There were 27 deaths from Whooping Cough compared with 41 deaths in 1907, and 17 deaths in 1906. They occurred in the age-periods as follows :—

0—1	1—5	5—10	10 and upwards.
12	14	1	0

INFLUENZA, BRONCHITIS, AND PNEUMONIA.

The number of deaths from Bronchitis and Pneumonia was 402, compared with 494 in 1907, and 358 in 1906; and the deaths from Influenza were 34, compared with 44 in 1907, and 22 in 1906.

Deaths from Bronchitis and Pneumonia in months :—

Jan.	Feb.	March	April	May	June
48	53	38	25	25	19
July	Aug.	Sept.	Oct.	Nov.	Dec.
15	22	26	19	59	58

ALCOHOLISM.

During 1908, 6 deaths were directly caused by Alcoholism and Delirium Tremens, compared with three during 1907.

During 1908, 18 deaths were caused by Cirrhosis of the Liver, which is a disease frequently associated with Alcoholism, compared with 18 during 1907.

The following is an analysis of the deaths from Alcoholism and Cirrhosis of the Liver, according to sex, and age-periods :—

Age.	Males.	Females.	Total.
15—25	0	0	0
25—35	2	1	3
35—45	1	1	2
45—55	5	0	5
55—60	2	3	5
60—65	4	1	5
65—75	3	0	3
75 and upwards	1	0	1
	—	—	—
	18	6	24

CANCER.

There were 108 deaths from Cancer during the year, compared with 113 during 1907, and 108 during 1906.

An analysis of deaths as to kind of Cancer shows that :—

80	were returned simply as	Carcinoma.
12	„ „	Malignant Disease.
9	„ „	Sarcoma.
6	„ „	Epithelioma.
1	was „ „	Rodent Ulcer.

On examining the death returns for 1908, it was found that Cancer affected the following parts of the body :—

Stomach	18
Intestines	15
Uterus	13
Breast	10
Rectum	7
Pylorus	5
Œsophagus	4

Liver	4
Jaw	4
Lung	3
Bladder	3
Face	3
Skin	2
Scrotum	2
Larynx	2
Kidney (left)	2
Inguinal Glands	2
Cervical Glands	3
Mediastinal Glands	1
Pancreas	1
Penis	1
Spleen	1
Middle Ear	1
Tongue	1

TABLE XL.

DEATHS FROM CANCER—1889-1908.

Year.	Male.	Female.	Total.
1889	20	32	52
1890	14	24	38
1891	19	34	53
1892	14	38	52
1893	23	37	60
1894	23	34	57
1895	33	48	81
1896	25	56	81
1897	28	44	72
1898	36	58	94
1899	28	52	80
1900	33	65	98
1901	27	64	91
1902	40	51	91
1903	35	57	92
1904	33	74	107
1905	46	67	113
1906	36	72	108
1907	45	68	113
1908	43	65	108

TUBERCULOSIS.

There were 217 deaths from Tuberculosis during 1908, compared with 222 during 1907.

Of these 217 deaths 148 were due to Phthisis or Tuberculosis of the Lungs.

During 1908 the death-rate from Tuberculosis was 1.60 per 1,000, and from Phthisis it was 1.09 per 1,000 living.

PHTHISIS.

During the year 1908, 136 notifications of Phthisis were received from medical men. 74 of which were males and 62 females, compared with 141 notifications received during 1907.

Of these 136 notifications, 26 were received from the Infirmary and 59 were private.

Twenty-three patients have been notified twice, and one has been notified three times by different medical men, since the voluntary notification of Phthisis was instituted in Blackburn in 1901.

The following table shows the number of notifications and deaths during 1908, arranged in months :—

DEATHS.

Jan.	Feb.	March.	April	May	June
17	10	12	15	15	12
July	Aug.	Sept.	Oct.	Nov.	Dec.
10	16	10	10	11	10

NOTIFICATIONS.

Jan.	Feb.	March.	April	May	June
15	9	10	16	17	16
July	Aug.	Sept.	Oct.	Nov.	Dec.
11	6	11	10	8	7

DEATHS FROM PHTHISIS.

Sixty deaths have been investigated by Dr. Linton. Of these, 31 were males and 29 females.

5 occurred between 1 and 15 years of age.
 13 „ „ 16 „ 25 „ „
 27 „ „ 26 „ 45 „ „
 15 „ „ at 45 years and upwards.

The approximate duration of the disease was as follows :—

In 10 cases the illness had lasted from 1 to 3 months.
 „ 5 „ „ „ 4 to 6 „
 „ 7 „ „ „ 7 to 12 „
 „ 16 „ „ „ 1 to 2 years.
 „ 6 „ „ „ 2 to 3 „
 „ 3 „ „ „ 4 to 5 „
 „ 4 „ „ „ 6 to 10 „
 „ 9 the length of illness was indefinite.

The length of time during which each person continued to work after being infected is roughly as follows :—

From 1 to 3 months, 4 had continued working.
 „ 4 to 6 „ 2 „ „
 „ 7 to 12 „ 5 „ „
 „ 1 to 2 years 8 „ „
 „ 2 to 3 „ 1 „ „
 „ 3 to 4 „ 1 „ „
 „ 4 to 5 „ 1 „ „

The above table does not include females engaged in house-work.

SOURCE OF INFECTION.

In 10 cases there was more or less probability of personal infection.

(1) No. 2. Male, 35 years. Was ill for four months. His son died of Phthisis a few months earlier.

(2) No. 16. Female, 28 years. A brother died of Phthisis nine years previously.

(3) No. 17. Female, 23 years. Worked for 10 months as tenter with a man who was known to have Phthisis. This man also died of Phthisis.

(4) No. 22. Male, 9 years. Mother died of Phthisis.

(5) No. 25. Male, 31 years. Mother died of Phthisis.

(6) No. 33. Female, 20 years. Mother died of Phthisis 13 years previously. Patient had hip disease from childhood.

(7) No. 38. Female, 45 years. A sister died of Phthisis not long before.

(8) No. 42. Female, 17 years. Mother died of Phthisis six years previously. Eight sisters died of Phthisis.

(9) No. 44. Male, 12 years. Mother and father both died of Phthisis.

(10) No. 57. Female, 21 years. Father has Phthisis. It is uncertain which was infected first.

In three cases the patient has probably infected another in the same household.

(1) No. 38. Male, 34 years. His sister, aged 25 years, is at present suffering from "weak chest" and cough.

(2) No. 49. Male, 39 years. His wife, with whom he slept up to the time of his death, is now probably suffering from early Phthisis.

(3) No. 52. Male, 30 years. His sister probably has incipient Phthisis.

HEREDITARY DISPOSITION ASCERTAINED FROM DEATHS FROM PHTHISIS.

Of 60 cases, 19 were ascertained to have a family history of Phthisis.

In one case both parents died of Consumption.

In one case the father, and in four cases the mother, had died of Phthisis; in another case the mother was found to be suffering from the disease.

In one case the mother's father had died of consumption.

In seven cases there was Consumption in collateral branches of the family.

In two cases an uncle, and in two cases one and two aunts respectively, on the mother's side, had died of Phthisis, while on the father's side in one case three near relatives, in one case an uncle, and in another an aunt had died of the disease.

In three cases one or more brothers or sisters had died of Phthisis, and in one case one sister died in infancy of Tuberculous Meningitis, and another suffered from Lordosis.

SOCIAL HABITS AND STATUS.

Of the 60 cases investigated, 12 had taken alcohol in excess. Of these 12, one had a family history of Phthisis.

ASSOCIATED RESPIRATORY DISEASES AMONGST COTTON OPERATIVES SUFFERING FROM PHTHISIS.

One instance was discovered—

No. 48. Female, 19 years. Pneumonia when four and eight years old, and subsequently frequent attacks of Bronchitis.

PREVIOUS ILLNESSES.

In one case the illness dated from an attack of Influenza, and in two cases from an attack of Pneumonia.

In one case the patient had suffered from a Cough dating from an attack of Measles.

In three cases recurrent bad colds had preceded the onset of Phthisis.

Two patients had suffered from Chronic Dyspepsia and weakness.

One patient had suffered from Anæmia and another from Heart Disease.

PREVIOUS TUBERCULAR DISEASES IN PHTHISICAL PATIENTS.

Female, 20 years. Had Hip Disease.

INSANITARY CONDITIONS AND OVERCROWDING AT HOUSES
CONTAINING PHTHISICAL PERSONS.

Of 54 private houses examined—

2 contained 2 rooms.			
1	„	3	„
33	„	4	„
3	„	5	„
15	„	6	„

The number of occupants was 5 or less in 33 out of 54 houses, but in one of these there were only two rooms, and the husband, wife and two adult daughters slept in one room.

Of the remaining 21—

5 contained 6 persons.

10	„	7	„
4	„	8	„
2	„	9	„

Of the five houses containing six persons, two were 4-roomed, and three 6-roomed.

Of the 10 containing seven persons, five were 4-roomed, two 5-roomed, and three 6-roomed.

Of the four containing eight persons, three were 6-roomed houses and one 4-roomed.

Of the two containing nine persons, one was 4-roomed and one 6-roomed.

The sanitary condition as a rule was fairly good.

Eleven houses were very dirty, and one of these was also very dark.

Three houses were dark but not dirty. In three houses the ground floor was found to be damp.

Of the 54 houses examined—

32 had fresh-water closets.

4 had slop-water closets.

18 had pails.

One case of possible house infection was discovered. A case of Phthisis had occurred at the house in question before the present tenants went in.

PRECAUTIONS TAKEN.

I.—AT HOME.

33 cases slept alone, but in some cases they slept on a bed made up in the living-room.

43 patients burned their sputum after expectorating on to rags or paper or into a special vessel.

In seven cases it was definitely ascertained that no precautions in the disposal of sputum were observed.

II.—AT WORK.

There is no evidence that any precautions are taken by patients while at work. No instance of the use of a pocket spittoon was discovered.

PHTHISIS NOTIFICATIONS.

Of the notified cases of Phthisis investigated during the year, 13 are still alive.

Ten of these are males and three are females.

The ages of the males are :

1	is	14	years	of	age.
1	„	16	„	„	„
1	„	18	„	„	„
1	„	19	„	„	„
1	„	24	„	„	„
2	are	29	„	„	„
1	is	33	„	„	„

In two cases the age was not ascertained.

The ages of the females are : 27, 36, and 40.

Length of illness :—

2 have been ill for an indefinite period.

2 „ „ 2 years.

1 has been ill for 1 year.

4 have been ill for 6 months.

2 „ „ 3 „

2 „ „ 2 „

FAMILY HISTORY OF PHTHISIS.

Obtained in six cases :—

(1) Male, age not ascertained. Father died of Phthisis many years ago.

(2) Female, 27 years. Mother's sister died of Phthisis many years ago.

(3) Male, 14 years. Four of the father's uncles and aunts died of Phthisis. A cousin on the mother's side has Phthisis.

(4) Female, 40 years. Father, one brother, and one sister died of Phthisis.

(5) Male, 33 years. Father died of "inflammation and pleurisy." Father's sister died of Phthisis.

(6) Male, 16 years. Father died of Phthisis.

Personal infection was probable in cases (4) and (6).

OCCUPATION.

Of 10 males—

2 are labourers.

2 are weavers.

1 is a driller in a foundry.

1 is a reacher.

1 is a clerk.

1 is a miner.

1 is in the fruit trade.

1 occupation not ascertained.

Of 3 females—

- 1 is a weaver.
- 1 is a charwoman.
- 1 is engaged in housework.

None of the above were working in mill or factory at the time of inquiry.

PREVIOUS ILLNESSES.

- 1 had had pneumonia.
- 1 .. typhoid.
- 1 .. "consumption of the bowels" in infancy.

HABITS.

One of the males and two of the females were intemperate in the use of alcohol.

SANITARY CONDITION OF HOUSES.

- 1 house had 2 rooms.
- 1 .. 3 ..
- 6 houses had 4 ..
- 2 .. 6 ..
- 1 house had 7 ..

Overcrowding occurred in four instances.

(1) Three adults and six children occupied a 4-roomed house.

(2) Seven people occupied a 4-roomed house.

(3) Three adults (including the patient, who is a lodger) and five children occupy a 4-roomed house.

(4) Five people occupy a 2-roomed house.

SANITARY ACCOMMODATION.

- 7 houses had fresh-water closets.
- 1 house had a slop-water closet.
- 3 houses had pail-closets.

PRECAUTIONS TAKEN AT HOME.

- 10 burned their sputum.
- 10 carried out isolation by sleeping alone.

DISINFECTION.

After each death from Phthisis I sent a letter stating that, for the protection of the health of the inmates, the house should be disinfected thoroughly, and offering to send men to carry out this work at the expense of the Health Department.

This offer was accepted in 84 instances out of the 148 deaths, as compared with 62 out of 113 deaths during 1907.

One hundred and two rooms at 84 houses were disinfected, and also the following articles were removed and disinfected :—

- 47 beds.
- 24 mattresses.
- 37 bolsters.
- 36 quilts.
- 18 blankets.
- 35 sheets.
- 26 carpets.
- 91 pillows.
- 87 suits of clothing.
- 116 sundries.

The following articles were destroyed, by consent of the owners :—

- 10 beds, 14 mattresses, 6 bolsters, 5 pillows, 6 quilts, 3 sheets, 3 blankets, 3 carpets, 6 suits of clothing, and 15 sundries.

The following are particulars respecting the seven early cases of Consumption who have been admitted to, and discharged from, the Meathop Sanatorium since the Corporation decided to subsidise four beds at that Institution :—

Case 1.—T.H., age 59. Was admitted on May 25th, 1908, and discharged on Sept. 24th, 1908. His weight on admission was 9st. 7½lb., and on discharge 10st. 12½lb. He had therefore gained 19lb. Tubercle bacilli were found in his sputum, and he had consolidation in both lungs. On discharge the patient had improved exceedingly and the disease was arrested, and he was fit for work, and with ordinary care should remain well.

Case 2.—T.A., age 41. Was admitted on May 25th, 1908, and discharged on Sept. 12th, 1908. His weight on admission was 10st. 3lb., and on discharge 11st. 4½lb. He had therefore gained 15½lb. Tubercle bacilli were found in his sputum. He had consolidation in one lung. On discharge the patient had improved exceedingly. The disease was arrested, and he was fit for work, and with ordinary care should remain well.

Case 3.—G.H.M., age 25. Admitted May 25th, 1908, and discharged on October 1st, 1908. His weight on admission was 8st. 12¼lb., and on discharge 9st. 11lb. He had therefore gained 12¾lb. Tubercle bacilli were found in his sputum. He had consolidation in both lungs. On discharge he had improved exceedingly. The disease was arrested, and he was fit for work, and with ordinary care should remain well.

Case 4.—F.B., age 11. Admitted on May 25th, 1908, and was discharged on October 8th, 1908. His weight on admission was 4st. 7¾lb., and on discharge 5st. 1¼lb. He had therefore gained 7½lb. Tubercle bacilli were found in his sputum, and he had consolidation in both lungs. On discharge he had improved. The disease was arrested, and great care will be necessary to maintain the improvement.

Case 5.—H.C., age 43. Admitted on September 17th, 1908, and was discharged on January 14th, 1909. His weight on admission was 9st. 7lb., and on discharge 10st. 11¼lb. He had therefore gained 18¼lb. Tubercle bacilli were found in his sputum, and he had catarrh in the upper lobes of both lungs. On discharge the disease was arrested and there was no sputum. He was fit for work.

Case 6.—J.T., age 40. Admitted on October 1st, 1908, and discharged on March 3rd, 1909. His weight on admission was 8st. 1lb., and on discharge 9st. 10 $\frac{3}{4}$ lb. He had gained 23 $\frac{3}{4}$ lb. Tubercle bacilli were found in his sputum, and he had much consolidation in one lung. On discharge the disease was arrested, there was no sputum, and he was fit for work.

Case 7.—W.D., age 14. Admitted on October 8th, 1908, and discharged on March 3rd, 1909. His weight on admission was 6st. 9lb., and on discharge 8st. 6 $\frac{1}{2}$ lb. He had gained 25 $\frac{1}{2}$ lb. Tubercle bacilli were found in his sputum. On discharge the disease was arrested, there was no sputum, and he was fit for work.

I examined several other cases of Consumption during the year, but they were unsuitable for Sanatorium treatment.

The Blackburn Charity Organisation Society promised to form an "After-Care" Committee, the members of which would visit regularly the men who had been discharged from the Meathop Sanatorium, and also would endeavour to provide these men with light out-door work.

At the request of this Society I suggested some suitable inquiries which might be made when the members of the After-Care Committee visited the homes, having especial regard to fresh-air in the bedrooms, exercise, and general hygienic conditions.

The Blackburn Charity Organisation Society has already sent out an appeal to householders, asking those who have not yet employed a window-cleaner to do so, so that out-door work might be found for the returning consumptives.

The object is that this shall be a business transaction and not charity, and that any profit which may be made will be used to benefit such consumptives. The above Society states that it has no desire to injure or compete with the Window Cleaning Companies which already exist in the town.

It is to be hoped that this measure will be a success, and that there will be an extension in other similar directions. I have pointed out previously the great importance of the after-care of consumptives who have been discharged from sanatoria with the disease arrested.

The following is a copy of the Order of the Local Government Board respecting the notification to Medical Officers of Health of cases of Phthisis occurring in Poor Law Institutions, or amongst patients under the care of District Medical Officers :—

WHEREAS We, the Local Government Board, are empowered by Section 130 of the Public Health Act, 1875, as amended by the Public Health Act, 1896, from time to time, to make, alter, and revoke Regulations for preventing the spread of endemic or infectious disease ; and to provide for the enforcement and execution of the Regulations ;

And whereas Tuberculosis is an endemic disease and that form of the disease which is known as Pulmonary Tuberculosis is an infectious disease ;

And whereas it appears to Us to be expedient that for preventing the spread of Tuberculosis, including Pulmonary Tuberculosis, such Regulations as are hereinafter set forth be made in relation to that disease :

NOW THEREFORE, We, by this Our Order and in the exercise of the powers conferred upon Us by the Public Health Act, 1875, the Public Health (London) Act, 1891, and the Public Health Act, 1896, and of every other power enabling Us in that behalf, do make the following Regulations, that is to say :—

Definitions.

ARTICLE I.—In these Regulations, unless the contrary intention appears :—

- (a) Words importing the masculine gender include females ;
- (b) Words in the singular include the plural, and words in the plural include the singular ;
- (c) Expressions referring to writing include references to printing, and to other modes of representing or reproducing words in a visible form, and references to printing include references to other mechanical modes of so representing or reproducing words ;
- (d) The expression “ Board of Guardians,” and the expression “ Poor Law Union,” have, in each case, the meaning assigned to the expression, as respects England and Wales, by the Interpretation Act, 1889 ;
- (e) The expression “ Joint Committee ” means a Joint Committee constituted for a combination of Poor Law Unions in pursuance of Section 8 of the Poor Law Act, 1879 ;
- (f) The expression “ Board of Managers ” means, as the case may be, the Board of Management of an Asylum District formed under the Metropolitan Poor Act, 1867, or of a School District formed under the Poor Law Amendment Act, 1844 ;
- (g) The expression “ Poor Law Institution ” means a Workhouse, a Workhouse Infirmary, or other building subject to the government of a Board of Guardians, or of a Joint Committee, or an Asylum, or a School subject to the government of a Board of Managers ;
- (h) The expression “ Superintending Officer ” means, in the case of a Workhouse, the Master ; in the case of a Workhouse Infirmary, the Superintendent, or, where there is no Superintendent, the Steward ; in the case of an Asylum, the Medical Superintendent, or other Head Officer ; in the case of a District School, the Superintendent ; and,

in the case of any such Poor Law Institution where, for the time being, there is no such officer as, in relation to that Poor Law Institution, is hereinbefore specified, and in the case of any other Poor Law Institution, that Officer whose duties comprise the superintendence of the administration of the Poor Law Institution, or, where there is no such Officer, that person whom We, in writing, select or appoint as a Superintending Officer for the purposes of these Regulations ;

- (i) The expression " poor person " means, as the case may be, a person who is or has been in receipt of relief from the Poor Rate ;
- (j) The expression " Council " means, as the case may be, the Mayor, Aldermen, and Commons of the City of London in Common Council assembled, the Council of a Metropolitan Borough, the Council of a Municipal Borough or other Urban District, or the Council of a Rural District ;
- (k) The expression " area " used in relation to a Council, means the area subject to the jurisdiction of the Council for the purposes of the Public Health (London) Act, 1891, or of the Public Health Act, 1875, as the case may be ; and
- (l) The expression " notification " means that part of each of the several Forms set forth in the Schedule to these Regulations in which the expression appears as a heading.

Commencement of Regulations.

ARTICLE II.—(1) These Regulations shall come into operation on the First day of January. One thousand nine hundred and nine, and, subject to the provisions of Article XII., shall then and thereafter apply and have effect throughout England and Wales, and shall be enforced and executed by every Council,

every Board of Guardians, every Joint Committee, and every Board of Managers

(2) These Regulations shall also apply to and be executed by all such officers as are mentioned therein, and where any such officer is prevented by sickness, accident, or other sufficient reason from the performance of the duties of his office, these Regulations, so far as they relate to that officer, shall apply to and be executed by the person duly nominated or appointed to act as the deputy of or substitute for the said officer.

Supply of Forms of Notification and Directory.

ARTICLE III.—For the purposes of these Regulations—

- (i.) Every Board of Guardians shall provide and maintain a sufficient supply of printed copies of each of the Forms A, B, C, D, and E, set forth in the Schedule to these Regulations ;
- (ii.) Every Joint Committee and every Board of Managers shall provide and maintain a sufficient supply of printed copies of each of the Forms A, C, and E, set forth in the Schedule to these Regulations ;
- (iii.) Every Board of Guardians, every Joint Committee, and every Board of Managers, shall, from time to time, furnish to each of the several officers who, in pursuance of these Regulations, are required to use a form of which the Board of Guardians, Joint Committee, or Board of Managers are required to provide and maintain a supply of printed copies, a book containing a sufficient number of those copies for the requirements of the officer and so arranged that every notification may be readily detached from the counterfoil ; and
- (iv.) Every Board of Guardians, every Joint Committee, and every Board of Managers shall provide and maintain in such a form, in such a manner, and subject to such arrange-

ments as will secure and facilitate access and inspection by each of the several officers who, in pursuance of these Regulations, are required to use a form of which the Board of Guardians, Joint Committee, or Board of Managers are required to provide and maintain a supply of printed copies, a full and accurate record of the name and postal address of the Medical Officer of Health appointed by each Council, and of such other particulars as are necessary to secure or facilitate the safe and prompt delivery of a notification to any such Medical Officer of Health in the ordinary course of post

Notifications by Medical Officers of Poor Law Institutions.

ARTICLE IV.—(1.) The Medical Officer of a Poor Law Institution, within the period of forty-eight hours after his first recognition of the symptoms of Pulmonary Tuberculosis in the case of a poor person who is an inmate of the Poor Law Institution, and who resided immediately before his admission to the Poor Law Institution at a place in the area in which the Poor Law Institution is situate, shall, in relation to the case, enter in a printed copy of Form A the particulars therein required to be set forth in the notification, shall sign the notification and shall address and, after prepaying the postage, shall post the notification to the Medical Officer of Health for the area in which the Poor Law Institution is situate.

(2.) The Medical Officer of a Poor Law Institution within the period of forty-eight hours after his first recognition of the symptoms of Pulmonary Tuberculosis in the case of a poor person who is an inmate of the Poor Law Institution and who, according to the best information in the possession of, or readily accessible by the Medical Officer, resided immediately before his admission to the Poor Law Institution at a place elsewhere than in the area in which the Poor Law Institution is situate, shall, in relation to the case, enter in a printed copy of Form A the particulars therein required to be set forth in the notification, shall sign the notification and shall address and, after pre-

paying the postage, post the notification to the Medical Officer of Health for the area in which the said place is situate.

Where two or more Medical Officers act for one and the same Poor Law Institution, these Regulations, so far as they relate to the Medical Officer of a Poor Law Institution, shall apply to and be executed by such one of those Medical Officers as is selected or appointed in writing by the Board of Guardians, the Joint Committee, or the Board of Managers to whose government the Poor Law Institution is subject, or as, in default of any such selection or appointment, is selected or appointed by Us in writing.

Notifications by District Medical Officers.

ARTICLE V.—A District Medical Officer, within the period of forty-eight hours after his first recognition of the symptoms of Pulmonary Tuberculosis in the case of a poor person upon whom he is in medical attendance according to his agreement with a Board of Guardians, shall, in relation to the case, enter in a printed copy of Form B the particulars therein required to be set forth in the notification, shall sign the notification, and shall address and, after prepaying the postage, shall post the notification to the Medical Officer of Health for the area in which the residence of the poor person is situate.

Notifications by Superintending Officers of Poor Law Institutions.

ARTICLE VI.—The Superintending Officer of a Poor Law Institution within the period of forty-eight hours after the departure from the Poor Law Institution of a poor person who has been an inmate of the Poor Law Institution, and in relation to whose case the Medical Officer of the Poor Law Institution has, in pursuance of Article IV., posted a notification to a Medical Officer of Health, shall, according to the best information in the possession of or readily accessible by the Superintending Officer with respect to the actual or intended place of destination of the poor person and his intended address at that place, enter

in a printed copy of Form C the particulars therein required to be set forth in the notification, shall sign the notification, and shall address and, after prepaying the postage, shall post the notification to the Medical Officer of Health for the area in which the place is situate.

Notifications by Relieving Officers.

ARTICLE VII.—A Relieving Officer, within the period of forty-eight hours after he has obtained accurate information respecting a change of residence (other than a change of residence by admission to a Poor Law Institution) by a poor person who resides or has resided within the Relief District assigned to the Relieving Officer, and in relation to whose case a District Medical Officer has, in pursuance of Article V., posted a notification to a Medical Officer of Health, shall, in relation to the case, enter in a printed copy of Form D the particulars therein required to be set forth in the notification, shall sign the notification, and shall address and, after prepaying the postage, shall post the notification to the Medical Officer of Health for the area in which the changed residence of the poor person is situate.

Counterfoils to be filled up, and Remuneration to be Allowed.

ARTICLE VIII.—(1.) Every Officer who, in pursuance of these Regulations, is required to enter particulars in a notification shall, at the same time, enter the like particulars in the counterfoil from which the notification may be detached.

Every such officer shall be entitled to receive for every notification in which he has entered particulars, and which he has posted to a Medical Officer of Health in pursuance of these Regulations, remuneration from the Council for whose area the Medical Officer of Health acts.

The remuneration in the case of a Medical Officer shall be at the rate of one shilling and in the case of every other officer at the rate of threepence for every such notification, and shall in every case be deemed to cover the cost of postage, but where,

in relation to one and the same case, two or more notifications have, in pursuance of these Regulations, been posted by the Medical Officer to one and the same Medical Officer of Health, the remuneration of the Medical Officer shall be at the rate of sixpence for every such notification as he has so posted subsequently to the posting of the first notification.

(2.) No remuneration shall be payable in pursuance of this Article to any officer in respect of a notification in any case in which the particulars entered in the notification have not also been entered in the counterfoil from which the notification has been detached.

(3.) Every officer to whom any remuneration is payable in pursuance of this Article shall make out quarterly according to the usual quarter days, in the Form E set forth in the Schedule to these Regulations, his account of sums claimed from a Council in pursuance of these Regulations, and shall on those days transmit the account to the Council, together with all such counterfoils as relate to the notifications in respect of which the sums entered in the Account are claimed.

The Council shall forthwith cause the accuracy of the items entered in every account made out and submitted in pursuance of this Article to be investigated and verified, and, after the completion of the investigation and verification, shall pay to the officer by whom the account has been transmitted to the Council, such remuneration, at the rate fixed by these Regulations, as the Council have ascertained to be due to that officer.

The Council shall at the same time return to the said officer all such counterfoils as relate to the notifications in respect of which payment is made to him.

*Exception and application of enactments, and Special Powers
of Councils.*

ARTICLE IX.—(1.) Nothing in these Regulations shall have effect so as to apply, or so as to authorise or require a Medical

Officer of Health or a Council, or any other person or authority, directly or indirectly, to put in force with respect to any poor person, in relation to whom a notification in pursuance of these Regulations has been posted to a Medical Officer of Health, any enactment which renders the poor person, or a person in charge of the poor person, or any other person, liable to a penalty, or subjects the poor person to any restriction, prohibition, or disability affecting himself, or his employment, occupation, means of livelihood, or residence, on the ground of his suffering from Pulmonary Tuberculosis.

(2.) Subject as aforesaid, a Council, on the advice of their Medical Officer of Health, in the case of a poor person in relation to whom a notification in pursuance of these Regulations has been posted to the Medical Officer of Health, may, for the purpose of preventing the spread of infection from Pulmonary Tuberculosis,—

- (i.) take all such measures, or do all such things as are authorised, in any case of infectious disease, or of dangerous infectious disease, by any enactment relating to public health, and as have reference to the destruction and disinfection of infected articles, or the cleansing or disinfecting of premises ;
- (ii.) take all such measures or do all such things as are appropriate and necessary for the safe disposal or destruction of infectious material, produced and discharged, as a result of Pulmonary Tuberculosis ; and otherwise for the prevention of the spread of infection from any such material ;
- (iii.) afford or supply all such assistance, facilities, or articles as, within such reasonable limits as the circumstances of the case require and allow, will obviate, or remove, or diminish the risk of infection arising from the conditions affecting the use or occupation of any room, when used or occupied by the poor person as a sleeping apartment ; and

(iv.) furnish, for the use of the poor person, on loan, or otherwise, any appliance, apparatus, or utensil which will be of assistance for the purpose of any precaution against the spread of infection.

(3.) A Council, on the advice of their Medical Officer of Health, may provide and publish or distribute in the form of placards, handbills, or leaflets, suitable summaries of information and instruction respecting Pulmonary Tuberculosis, and the precautions to be taken against the spread of infection from that disease.

Expenses of Poor-law Authorities.

ARTICLE X.—All expenses incurred by a Board of Guardians, a Joint Committee, or a Board of Managers, in pursuance of these Regulations, shall be defrayed as part of their establishment expenses under the Acts relating to the relief of the poor, and any rules, orders, or regulations made in pursuance of those Acts and in force for the time being.

Determination of Questions.

ARTICLE XI.—If a question or difference arises in relation to any subject-matter of, or to anything done under these Regulations, the question or difference shall on the application of any of the parties affected be referred to Us for determination.

The question or difference shall be determined by Us in writing and otherwise than as arbitrators, and Our determination shall be final and conclusive, and may, where the circumstances appear to Us so to require, extend to the removal of any difficulty arising out of or affecting the operation of these Regulations.

Modifications consequent upon Local Acts.

ARTICLE XII.—Nothing in these Regulations shall have effect in derogation of any power conferred, or of any obligation imposed with respect to Pulmonary Tuberculosis by a Local Act.

Subject as aforesaid and subject to the condition set forth in sub-division (1) of Article IX., these Regulations shall apply and have effect in relation to every area in which a Local Act containing provisions with respect to Pulmonary Tuberculosis is in force :

Provided that, on the application of the Council of the area, We may, by Order, direct that so much of these Regulations as relates to a notification by a Medical Officer of a Poor-law Institution or by a District Medical Officer shall cease to have effect in relation to that area, and that, after the date fixed by Our Order, these Regulations shall apply to the area with such exceptions as are required by, and are consistent with Our direction.

Short Title.

ARTICLE XIII.—These Regulations may be cited as “ the Public Health (Tuberculosis) Regulations, 1908.”

SCHEDULE.
FORM A.
PUBLIC HEALTH (TUBERCULOSIS) REGULATIONS, 1908.

<p style="text-align: center;"><i>Counterfoil.</i></p> <p>No.</p> <p>Poor Law Institution</p> <p>Name of Poor Person</p> <p>Residence before admission)</p> <p>Age</p> <p>Sex</p> <p>Sanitary District to which Notification is sent)</p> <p>Date when sent</p> <p style="text-align: right;">(Signed) Medical Officer.</p>	<p style="text-align: center;"><i>Notification.</i></p> <p>No.</p> <p>To the Medical Officer of Health for the of</p> <p>I hereby give you notice that, in my opinion, the poor person who is now an inmate of the Poor Law Institution known as the belonging to the and in relation to whom particulars are appended, is suffering from Pulmonary Tuberculosis.</p> <p>Name of Poor Person</p> <p>Residence of Poor Person prior to admission to the above-named Poor Law Institution)</p> <p>Age</p> <p>Sex</p> <p>Dated this day of 190 ..</p> <p style="text-align: right;">(Signed) Medical Officer for the above-named Poor Law Institution.</p>	
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FORM B.

PUBLIC HEALTH (TUBERCULOSIS) REGULATIONS, 1908.

145

Counterfoil.

Notification.

No.

No.

..... Union.

..... Union.

Name of Poor Person

I hereby give you Notice that, in my opinion, the poor person in relation to whom particulars are appended, is suffering from Pulmonary Tuberculosis.

Residence

Age

Name of Poor Person

Sex

Residence

Sanitary District to which Notification is sent

Sex

Dated this day of 190 ..

Date when sent

(Signed)

Medical Officer for the

(Signed)

..... District of the

Medical Officer.

..... Union.

PUBLIC HEALTH (TUBERCULOSIS) REGULATIONS, 1908. FORM C.

Counterfoil.

No.

Poor Law Institution
 Name of Poor Person
 Age
 Sex
 Date of leaving the }
 Poor Law Institution }
 Actual or intended }
 place of destination }
 Intended address }
 at place of destination }
 Sanitary District to }
 which Notification is sent }
 Date when sent
 (Signed)
 Superintending Officer.

Notification.

No.

To the Medical Officer of Health
 for the of
 I hereby give you Notice that the poor person in
 relation to whom particulars are appended has, by the
 Medical Officer for the Poor Law Institution known as
 the belonging to been
 notified as suffering from Pulmonary Tuberculosis, and
 that on the day of the said
 poor person left that Poor Law Institution, and that
 the actual or intended place of destination of the poor
 person and his intended address at that place are
 those set forth in the said particulars.
 Name of Poor Person
 Age
 Sex
 Actual or intended place }
 of destination }
 Intended address at place }
 of destination }
 Dated this day of 190 .
 (Signed)
 the Superintending Officer of
 above-mentioned Poor Law Institution.

FORM D. PUBLIC HEALTH (TUBERCULOSIS) REGULATIONS, 1908.

Counterfoil.

Notification.

No. Union.
.....
Name of Poor Person
Age
Sex
District of District }
Medical Officer by }
whom notification }
was made }
Date of change }
of residence }
Residence prior }
to above date }
New Residence
Sanitary District }
to which Notifica- }
tion is sent }
Date when sent
(Signed)
Relieving Officer.

No. Union.
.....
To the Medical Officer of Health
for the of

I hereby give you Notice that the poor person in relation to whom particulars are appended has, by the District Medical Officer for the District of the Union, been notified as suffering from Pulmonary Tuberculosis, that on the day of 190 , the poor person removed from the residence firstly specified in the said particulars and the changed residence of the poor person will be that secondly specified in those particulars.

Name of Poor Person
Age
Sex
Residence prior to the date }
above-mentioned }
New Residence
Dated this day of 190 .
(Signed)
Relieving Officer for the
..... District of the Union.

Dated this day of, 19.....

(Signed)

..... Officer,

.....

Given under the Seal of Office of the Local Government Board, this Eighteenth day of December, in the year One thousand nine hundred and eight.

JOHN BURNS,

President.

S. B. PROVIS,

Secretary.

Date of publication in the London Gazette,
18th December, 1908.

Notice.—The Public Health Act, 1896, provides by subsection 3 of Section 1 that, if any person wilfully neglects or refuses to obey or carry out, or obstructs the execution of any regulation made under any of the enactments mentioned in that Act, he shall be liable to a penalty not exceeding one hundred pounds, and, in the case of a continuing offence, to a further penalty not exceeding fifty pounds for every day during which the offence continues.

The following is a copy of the circular letter sent by the Local Government Board concerning the above Order :—

LOCAL GOVERNMENT BOARD,
WHITEHALL. S.W.

18th December, 1908.

SIR,

I AM directed by the Local Government Board to state that they have had under consideration the desirability of affording facilities for the extension of administrative action for the prevention of tuberculosis. and that with this view they have issued

an Order in pursuance of Section 130 of the Public Health Act, 1875, as amended and extended by the Public Health (London) Act, 1891, and the Public Health Act, 1896, to provide for the notification to the Medical Officers of Health of Sanitary Authorities of cases of pulmonary tuberculosis occurring amongst the inmates of Poor-law Institutions, or amongst persons under the care of District Medical Officers, and for the taking of certain measures in such cases.

Notification by Medical Officers of Poor-law Institutions.

Article IV. of the Order directs that the Medical Officer of a Poor-law Institution, as defined by Article I., shall, within 48 hours after his first recognition of the symptoms of pulmonary tuberculosis in the case of a poor person who is an inmate of the institution, post to the Medical Officer of Health for the sanitary district in which the person resided immediately before he became an inmate of the institution a notification of the case.

The notification must be made on a printed form as set out in the Schedule to the Order.

Notification by District Medical Officers.

Article V. directs that a similar notification shall be posted to the Medical Officer of Health by the District Medical Officer in the case of any poor person suffering from pulmonary tuberculosis on whom he is in medical attendance according to his agreement with a Board of Guardians.

The notification must be posted within 48 hours after the District Medical Officer has first recognised the symptoms of pulmonary tuberculosis, and must be addressed to the Medical Officer of Health acting for the sanitary district in which the residence of the poor person is situate.

Notification by Superintending Officers of Poor-law Institutions.

Under Article VI. it will be the duty of the Superintending Officer of a Poor-law Institution to post to the Medical Officer

of Health on a printed form as set out in the Schedule to the Order a notification of the actual or intended place of destination and address at that place of any person leaving the institution in respect of whom a notification has been made by the Medical Officer of the institution under Article IV.

The notification must be posted within 48 hours after the departure of the person to whom it relates, and must be sent to the Medical Officer of Health of the sanitary district in which the intended destination of the person is situate.

Notification of changes of address by Relieving Officers.

Article VII. provides that a Relieving Officer shall notify any change of address (other than by admission to a Poor-law Institution) of a person in respect of whom a notification has been made under Article V. by a District Medical Officer.

The notification must be made on a printed form as set out in the Schedule to the Order, and must be sent to the Medical Officer of Health for the sanitary district in which the address to which the person moves is situate.

The notification must be posted within 48 hours after the Relieving Officer has obtained accurate information respecting the change of residence.

Remuneration to be allowed.

Provision is made by Article VIII. for the remuneration of the Officers who have to make notifications under the Order. In the case of the Medical Officer of a Poor-law Institution or a District Medical Officer, the remuneration will be at the rate of one shilling for every notification, but where in relation to any one case two or more notifications have been posted by the Medical Officer to the same Medical Officer of Health, his remuneration will be at the rate of sixpence for every such notification after the first.

In the case of a Superintending Officer of a Poor-law Institution or a Relieving Officer, the remuneration will be at the rate of threepence for every notification.

The remuneration will be payable by the Council of the sanitary district for which the Medical Officer of Health acts, it will be deemed to cover the cost of postage, and it will be payable in the manner and subject to the conditions prescribed by the Article.

Supply of Forms.

It will be the duty of the Poor-law Authorities referred to in Article III. to supply to the officers concerned printed copies of the appropriate forms set forth in the Schedule to the Order.

Exception and Application of Enactments.

Some of the provisions of the Public Health Act, 1875, and of the Public Health (London) Act, 1891, relative to infectious disease are not usually appropriate in cases of pulmonary tuberculosis.

The Board have, therefore, provided by Article IX. (1) that nothing in the Regulations shall have effect so as to apply or to authorise anyone to put in force with respect to a person in relation to whom a notification has been made any enactment which renders him or any other person liable to a penalty or subjects him to any restriction, prohibition, or disability affecting him or his employment, occupation, means of livelihood, or residence on the ground of his suffering from pulmonary tuberculosis.

Special Powers of Councils.

Subject to what is stated in the preceding paragraph, it is desirable that Sanitary Authorities acting on the advice of their Medical Officers of Health should utilise their powers for the purpose of preventing the spread of infection from pulmonary tuberculosis. The Order confers some special powers which the

Board are advised are suitable for this purpose, and which are set out in Article IX. (2) of the Order.

The Board propose to issue for the use of Sanitary Authorities and Medical Officers of Health a memorandum by their Medical Officer setting out the appropriate action that can be taken under these powers. Copies of the memorandum will be sent to the Council in due course.

Determination of Questions or Differences.

Article XI. will enable the Board to determine any question or difference in relation to anything done under the Order on the application of any of the parties affected.

Pulmonary Tuberculosis Notifiable under Local Acts.

Article XII. deals with those cases in which powers have been obtained with respect to pulmonary tuberculosis by a Local Act. Nothing in the Regulations will have effect in derogation of any power or obligation under any such Act, but subject to this the Regulations will apply to any district in which a Local Act containing provisions with respect to pulmonary tuberculosis is in force.

The Board may, however, on the application of the Council of the district direct that so much of the Regulations as relates to a notification by a Medical Officer of a Poor Law Institution or a District Medical Officer shall not have effect in relation to that district.

Date on which the Order comes into effect.

The Order will take effect on and after January 1st next, and it is desirable that the arrangements which are necessary to facilitate carrying it out should be made without any delay. In fixing January 1st as the date when the Order shall come into operation the Board have had regard to the convenience, from a

statistical point of view, of the Order taking effect at the commencement of a calendar year. If, however, any delay occurs in the printing of the forms, it may be understood that it will not be necessary to carry out the Regulations until these can be obtained.

Copies of the Order and Circular are enclosed, and I am to request that a copy of each may be given to the Medical Officer of Health.

The Order and Circular will be placed on sale so that copies may shortly be obtained, either directly or through any bookseller, from Messrs. Wyman and Sons, Limited, Fetter Lane, London, E.C.

I am, Sir,

Your obedient Servant,

S. B. PROVIS.

Secretary.

Then early in 1909 the following Circular Letter and Memorandum were sent from the Local Government Board, and as they are so very important and should be brought to the notice of all members of Health Committees, I have reproduced them.

PUBLIC HEALTH (TUBERCULOSIS) REGULATIONS, 1908.

LOCAL GOVERNMENT BOARD,

WHITEHALL, S.W..

4th March, 1909.

Sir,

I AM directed by the Local Government Board to advert to the Public Health (Tuberculosis) Regulations, 1908, and to their circular letter of the 18th December, 1908, in which they stated that they proposed to issue a memorandum by their Medical Officer setting out the appropriate action that can be taken under the powers conferred on Sanitary Authorities by the Regulations. Copies of this Memorandum are now enclosed.

The Regulations apply only to patients who come under the care of poor law medical officers, but in view of the fact that in many districts there is a voluntary notification of cases of pulmonary tuberculosis by medical practitioners generally, the Memorandum has been extended so as to deal with preventive measures in respect of cases notified under a voluntary system.

The Board request that one copy of the Memorandum may be given to the Medical Officer of Health, and they trust that the Council, in consultation with him, will take such action as may be practicable of the kind indicated in the Regulations and Memorandum.

They are desirous that in each Annual Report the Medical Officer of Health should include a statement of the action taken by the Local Authority under the Regulations.

The Memorandum will be placed on sale so that copies may shortly be obtained, either directly or through any bookseller, from Messrs. Wyman and Sons, Limited, Fetter Lane, London, E.C.

I am, Sir,

Your obedient Servant,

S. B. PROVIS.

Secretary.

MEMORANDUM BY THE MEDICAL OFFICER OF THE LOCAL GOVERNMENT BOARD ON ADMINIS- TRATIVE MEASURES AGAINST TUBERCULOSIS.

In this Memorandum it is proposed to supplement from a medical standpoint the information contained in the circular letter issued by the Local Government Board, which was sent with the Public Health (Tuberculosis) 1908 Regulations to all Sanitary Authorities and Boards of Guardians.

The prevention of tuberculosis and the aid which can be given to patients suffering from it depend in large measure on

knowledge of its pathology, and the earlier part of this memorandum deals briefly with this aspect of the question. Afterwards are set forth the chief administrative measures that can be taken against the disease, and the different forms of aid that can be given to the patient, either through administrative or voluntary agencies.

1. *Scope of the Order and of this Memorandum.*

The Order deals only with those patients who come under the care of Poor-law medical officers, either at home or in Poor-law institutions. Such patients are often only temporarily within the scope of Poor-law administration, though at other times they may still need help and supervision. Furthermore, public health administration, whether dealing with poor persons, as defined in the Board's Order, or with other patients suffering from pulmonary tuberculosis, is concerned with similar problems : though these problems are more acute, and help is more urgently needed in cases of poor-relief than in other cases. In all cases alike, however, it will be wise to take measures to avoid the spread of infection, and with this object in view to educate and train the patient in the method of life suitable to his disease, to secure for him separate sleeping accommodation so far as circumstances permit, either at home or in an institution, to disinfect rooms which have become infected, and to remove all conditions which favour infection or re-infection.

In a few towns, all cases of pulmonary tuberculosis are compulsorily notifiable under local Acts of Parliament. In a considerable number of urban and rural districts, voluntary notification of cases of pulmonary tuberculosis is invited by the sanitary authority and secured in some proportion of the total cases of this disease. The Board have always advised that the payment of reasonable fees for the voluntary notification of cases of pulmonary tuberculosis to the Medical Officer of Health is within the powers of a Sanitary Authority.

As poor persons frequently pass outside the scope of the Poor-law, and as in many sanitary districts the Regulations as to

tuberculosis will be worked alongside of a system of voluntary notification of patients affected with pulmonary tuberculosis, but not in receipt of relief, it is convenient and desirable not to limit the scope of this memorandum strictly to poor patients.

2. *Characteristics of Tuberculosis.*

Tuberculosis is an infectious disease caused by the tubercle bacillus. Its development is aided by defective nutrition and by other conditions unfavourably influencing personal health, and by insanitary circumstances of environment; but the indispensable element in its causation is the tubercle bacillus, and the disease can be prevented by avoiding infection. The knowledge that tuberculosis is caused by the tubercle bacillus gives importance to the bacteriological diagnosis of tuberculosis mentioned in paragraph 4. In this memorandum infection from human patients alone is considered, as this is chiefly responsible for the causation of pulmonary tuberculosis.*

Tuberculosis is not only a preventable disease, but it can also be arrested, especially in its earlier stages; and indeed the vast majority of those attacked by it recover.

The total prevalence of tuberculosis as indicated by mortality has already greatly declined. This decline has occurred under the influence of improved sanitation and higher social welfare. These improved conditions have acted by diminishing infection and by increasing the resistance of the population to infection. Thus the vastly increased treatment of advanced cases of pulmonary tuberculosis in infirmaries and other institutions has been most valuable in securing segregation of patients from their families as well as in securing humane treatment for the patients themselves. Diminution of overcrowding has diminished infection and increased the resistance to it; and other measures of sanitation and social improvement have acted either

* Infection by bovine tuberculosis occurs chiefly by means of infected cows' milk, and can be avoided domestically by boiling milk. In France and Germany cows' milk is almost universally boiled.

by increasing resistance to, or by diminishing the amount of, infection in the community, or usually by the combined influence of both these factors.

Degree of Infectiousness of Pulmonary Tuberculosis.—As

an infectious disease, pulmonary tuberculosis differs in several important respects from most of the acute infectious diseases. Its infection is derived under ordinary circumstances from one channel only, that of the lungs, the infectious material being discharged as expectoration or as cough-spray. This mode of infection can be controlled by the patient with but little trouble, if he is intelligent and scrupulously careful; whereas in the acute infectious diseases constant isolation of the patient is usually needed to protect susceptible persons. Against the limited channels of transmission of pulmonary tuberculosis must be set its protracted duration. It may be infectious during months or even years, instead of only for a few weeks. This statement needs to be remembered in conjunction with the following facts: 1st, a tuberculous patient discharges tubercle bacilli in his expectoration only at intervals; and 2nd, the evidence clearly points to the conclusion that in most instances short exposure to infection does not suffice to infect healthy persons to an extent that will produce serious disease.

These facts not only indicate that an exaggerated fear of infection in pulmonary tuberculosis is unnecessary; but they also emphasise the desirability of inculcating more exact knowledge as to the disease; and it is convenient to discuss at this stage the steps that can be taken to this end, although this discussion necessarily to a certain extent stretches into the province of administrative measures considered in later paragraphs.

3. *Educational Measures against Tuberculosis.*

Tuberculosis has often been described as a *disease of misery*. This is true, in the main, because misery favours infection; to a less degree because it renders the patient a ready victim to infection. But tuberculosis is much more a *disease of ignorance*.

and many of the measures for its treatment and relief—whether by home visits, dispensaries, or sanatoriums—if properly employed, have among their most valuable results the hygienic training of the patient.

Educational measures will naturally comprise means for instructing the members of the general community, those more directly exposed to the infection of tuberculosis, and those already tuberculous. It is unnecessary here to enlarge upon the importance of teaching hygiene in school life as an aid in the fight against tuberculosis. An active and valuable propagandism outside school life is rapidly diminishing the number of those *who do not know* and increasing the number of those *who know* the essentials of the prevention of tuberculosis, and is increasingly bringing the pressure of public opinion to bear against indiscriminate expectoration, and against overcrowding and other evils of housing and occupation. Much more could be done in these directions by special instruction of various social groups, trades unions, friendly societies, and so on, as well as in the Army and Navy.

It is more urgently necessary that special instruction should be given to those more directly exposed to tuberculous infection; and the value of notification is especially evident in this direction. Precise knowledge of the conditions under which tuberculosis is transmissible, of the channels of infection, and of means for appropriate disposal of expectoration, etc., are most desirable, if the relatives and attendants upon consumptive patients are to remain free from danger and free from an exaggerated fear of infection. More complete knowledge is the best means of preventing misapprehension. This knowledge should be possessed not only by nurses and relatives attending patients, but so far as practicable by those engaged in occupations in which tuberculosis is most rife, *e.g.*, among potmen, potters, cutlers, tin, lead or copper miners, bookbinders, printers, hairdressers, etc. Although cards of instruction are valuable, personal explanation by health visitors or others, when intelligently carried out, is much more efficacious; and opportunity may advantageously be taken as it arises to give collective instruction to nurses, to mothers, or to

the members of friendly society and other clubs, in the groups particularly affected by tuberculosis.

Instruction of the tuberculous patient is essential for the prevention of tuberculosis. Pulmonary tuberculosis being a disease of protracted duration, the institutional or domestic isolation of patients during the whole course of the disease is impracticable. No responsible administrator would contemplate such a possibility. The ideal to be aimed at is that, wherever the patient lives and works, his powers of infectivity shall be inoperative. This ideal is not likely to be realised unless specific instructions are given in such a way that they will become effective in the patient's life. Of the means to this end, temporary abode in a Sanatorium is probably the most effective (*see* paragraph 11). The habits of life thus initiated can be maintained by continued watchfulness and care under a private practitioner or in connection with a tuberculosis dispensary, and by the home-visiting of a competent and sympathetic health visitor or nurse (paragraphs 7, 8, and 9). They are most likely to be maintained if the desire for recovery and the conscientious determination to avoid infecting others are both brought to bear as motives influencing the patient's manner of life.

4. *Early Diagnosis.*

Stress has been laid upon teaching the nurses and relatives of the consumptive patient. Except in so far as it is given as part of instruction to the general community, instruction of those about a patient can only begin when the nature of his disease has been recognised. For this among other reasons every facility for securing early diagnosis is an important means of preventing tuberculosis.

Among the most valuable of these is—

Bacteriological diagnosis by detection of tubercle bacilli in the sputum. Although pulmonary tuberculosis can be diagnosed before there is any expectoration if the patient on consulting a medical practitioner is examined with great care, yet in actual

experience the provision of facilities for the gratuitous bacteriological examination of sputum is one of the most successful means of securing an earlier recognition of cases of this disease than would otherwise occur.

The medical inspection of school children will, it is hoped, secure the detection of previously unrecognised cases among school children.

Under present conditions a large proportion of the total cases of pulmonary tuberculosis remain unrecognised until either consolidation or cavitation of lungs has occurred and patients are approaching or have reached the period of complete disablement for work. In such cases there must already have been many opportunities for spreading infection. Happily, there is strong reason to think that usually only those who have been exposed to protracted infection become infected to an extent that produces serious disease; but it is, nevertheless, very important that the precautionary measures should be begun at an early period of disease, especially as this enables the patient himself to receive effective, because early, treatment.

The visits following notification of cases of pulmonary tuberculosis may not infrequently be made the means of securing early diagnosis of previously unrecognised cases in the same household. At this point, among others, voluntary and official agencies can join forces for the giving of hospital and dispensary letters to failing members of the affected household.

The conditions under which dispensary and hospital aid can be obtained are mentioned later (pars. 10, 11, and 12). They need to be considered at this point in relation to the facilities for early diagnosis. More effective preventive measures could be taken, were every encouragement given for the systematic treatment of "persistent colds," repeated attacks of "bronchitis" and the like, which may indicate an early stage of pulmonary tuberculosis. The difficulties that the poor frequently experience in obtaining hospital out-patient letters and the delay involved in receiving skilled attendance at such in-

stitutions render it desirable for large communities to consider the need for a special tuberculosis dispensary at which every encouragement is given for the early diagnosis of disease. The organisation of such dispensaries is considered in par. 10.

5. *The Medical Practitioner's position in relation to Preventive Measures.*

When a diagnosis has been secured, the first and most essential point is for the doctor in attendance, whether he be the Poor-law Medical Officer or a private practitioner, to acquaint the patient with the nature of his illness. This is indispensable, if the active co-operation of the patient in regard to precautions is to be secured. It is equally necessary for the patient's own welfare, which depends in large measure on his intelligent carrying out of instructions. As the vast majority of cases of pulmonary tuberculosis recover when recognised early, and as life in more advanced cases can be prolonged by efficient treatment, there need be no hesitation in following this course.

The doctor will also consider whether, even though the particular case is not compulsorily notifiable, he will not be acting in the interest of his patient, as well as of the public health, to notify his case to the Medical Officer of Health, under a voluntary system of notification.

Next must follow the giving of instructions to each patient and the disinfection of bedrooms, etc., when the need for this is indicated. Although the medical attendant may be able to give the personal instructions, it is none the less true that, under the usual conditions of medical practice, and particularly among the poor, supplementary aid is required to prevent infection and to secure the best arrangements for the patient's welfare.

It should be the aim of the Medical Officer of Health to furnish this supplementary aid in a way that will secure the continued co-operation with him of the patient and of his medical attendant.

6. *The Administrative Control of Tuberculosis.*

Incidentally some of the measures for the administrative control of tuberculosis have already been mentioned. The educational measures enumerated in par. 3 go far towards preventing the disease; and indeed every administrative measure is successful just so far as it secures enlightened precautions on the part of the consumptive patient.

Measures to secure early diagnosis, whether by bacteriological or other means, stand equally high as means of preventing the disease; for direct precautionary means—apart from scrupulous care respecting expectoration on the part of the entire population—can only be taken when a diagnosis has been made.

By providing information to the Medical Officer of Health as to the presence of cases of pulmonary tuberculosis among the poor, the Regulations as to tuberculosis recently issued by the Board enable sanitary defects to be promptly remedied and those administrative measures of control introduced that are set out in this Memorandum.

Of other measures against tuberculosis, the most important are the investigation of cases of the disease, advice being given, disinfection and cleansing recommended, and spit-bottles supplied to the poor; the provision of dispensary or Poor-law treatment of patients; the provision of sanatoria and of hospitals for advanced cases of disease.

These measures are, to a very large extent, also measures for aiding consumptive patients. The two objects cannot, in fact, be completely separated. The measures taken for preventing infection equally prevent the patient from receiving further doses of infective material, and he especially will gain by their success. That no strict line of demarcation can be drawn between personal and communal interests is further indicated by the fact that the community, by diminution of infection and by avoidance of loss of working ability, gains greatly

when patients are cured, or when, apart from their cure, they are so housed that they cease to disseminate infection. Hence measures for the treatment of the individual patient cannot be left out of consideration in providing against the spread of the disease, any more than they can in the case of enteric fever. In both diseases the cure and the care of the individual patient are the most effective means of avoiding further cases.

7. *Procedure in Official Investigations.*

When a notification of a case of pulmonary tuberculosis has been received by the Medical Officer of Health, certain inquiries should follow. These inquiries should be made by the Medical Officer of Health or by a trained assistant, and the advice given at these visits should, as already indicated, be so given as not to interfere with advice already given by the doctor in attendance on the patient. The objection that the patient or his relatives on rare occasions make to the visit, can be met by indicating early in the interview the points in connection with which the patient can be helped, inquiries as to the previous or family history of the patient being taken up later, possibly at a second interview. By the exercise of tact and discretion, there seldom need be difficulty in obtaining all the information required for public health purposes, or in giving all the counsel that the patient and his family need. Above all, the investigator must not pursue inquiries in a manner or give information that may prevent a consumptive patient from continuing to earn his livelihood. His duty in this respect as a rule ends when he has advised as to the precautions to be adopted. This attitude does not prevent him from investigating, *apart from notifications*, the conditions under which consumptive patients work, and such investigations are sometimes indicated.

Re-visits should be made by an officer from the medical officer of health's department, such as an inspector, health-visitor, or a nurse set apart for this work, who will encourage the patient in carrying out the treatment necessary for maintaining his ability to work, and the precautions needed to pre-

vent infection. The results of these visits should be reported to the Medical Officer of Health or to the attending physician (paragraphs 9 and 10) according to circumstances.

The Board's Regulations as to Tuberculosis provide for the Medical Officer of Health obtaining information that shall enable him to keep in touch with consumptive Poor-law patients, when they change their abode. The Regulations also enable the Medical Officer of Health to have infected premises cleansed and disinfected before they are occupied by new tenants. Incidentally also, the Regulations enable him to secure much more promptly than would ordinarily be practicable, remedial action in regard to insanitary conditions of dwellings, and particularly overcrowding under circumstances involving the specific danger of infection.

8. *Action against Infection.*

The chief means for the prevention of infection in tuberculosis is the prevention of indiscriminate expectoration. For this purpose sanitary authorities having the necessary powers may advantageously make bye-laws prohibiting spitting in public carriages, halls, waiting-rooms, or places of public entertainment; and the enforcement of such bye-laws, and the exhibition of notices warning against expectoration have a most beneficial influence.

The visit of the Medical Officer of Health or of his assistant to the patient will be made the occasion for instruction as to covering the mouth when coughing, and as to the method of use of suitable handkerchiefs and of pocket spit-bottles. The sanitary authority can provide such spit-bottles or other suitable means of preventing the spread of infection. Frequently such precautions have not been adopted in the past course of the case, and disinfection and cleansing of bedrooms will therefore be indicated. Such disinfection should always be carried out when the patient changes his address.

Continued spread of infection can be obviated if the patient will carry out the simple precautions indicated above,

concerning which detailed advice should be given in each case. The patient's habits as to spitting are, however, often difficult to change. Hence the importance of the short training of patients in a sanatorium to which allusion is also made in paragraphs 3 and 11. At a later stage of illness difficulty in preventing infection arises from another cause. The patient is feeble and possibly bed-ridden; his cough is violent and his expectoration frequent and excessive; and under such conditions, in the home circumstances commonly prevailing among the poor, the avoidance of repeated and massive infection is difficult. It is at this stage that institutional treatment becomes a very important means of preventing infection (*see* paragraph 12).

It will be noted that, subject to not inflicting upon the poor person coming within the scope of the Board's Regulations as to 'Tuberculosis, "any restriction, prohibition, or disability affecting himself, or his employment," etc., the Sanitary Authority can under these Regulations take all necessary measures for the disinfection or cleansing of infected articles and premises, as in the case of any infectious disease; for the safe disposal or destruction of infective material discharged by consumptive patients; for the proper use of sleeping apartments; and for furnishing any appliance, etc., that may help in preventing the spread of infection. These regulations will enable the Sanitary Authority and its officers to minimise the risks of infection from Poor-law patients caused by unguarded spitting and by improper use of sick-rooms. There will, it is hoped, be little difficulty in securing the observance of the same precautions in respect of other than Poor-law cases of pulmonary tuberculosis.

If the patient should continue to be treated at home, visits will be made at intervals by an officer attached to the medical officer of health's department, or in larger towns attached to a tuberculosis dispensary; and these visitors will encourage the patient to pursue the necessary regime, and to make regular visits to his doctor or to the centre for medical aid.

9. *Home Training and Supervision.*

If the patient is treated at home throughout the whole course of his illness, it is much more difficult to secure his continuous adoption of the necessary precautionary measures than if he has had a short course of treatment and training in a sanatorium (*see* paragraph 11). To ensure this end requires conscientious perseverance on the part of the patient, and tactful advice and encouragement from the visitor sent as a result of notification. If the patient is in the charge of a family practitioner, the latter should be able to give much assistance. If the patient cannot afford to have a private doctor, the need for systematic medical assistance of some other kind arises. The patient may remain under the care of the Poor-law medical officer, and in such cases it will not be difficult for the visitor to co-operate with him in the interest of the patient and of those about him. As a rule, however, Poor-law cases of pulmonary tuberculosis, being most often cases of advanced disease, are preferably treated in the Infirmary (*see* paragraph 12).

If the patient is treated at home under the care of a private practitioner, the visitor's work will be limited by the considerations advanced in paragraphs 7 and 8.

If the patient, although poor, is not a Poor-law patient, but attends at intervals as an out-patient at a hospital or a dispensary, the visits he receives will advantageously be somewhat more frequent than when the patient is under the care of a private practitioner, and may be made helpful not only in advising the patient as to measures of personal hygiene and precautions against infection, but also in bringing him into relationship with the agencies for aid that his circumstances indicate as needed. Of these, the most important when completely organised is--

10. *The Tuberculosis Dispensary.*

The object of this institution is to secure early diagnosis for patients suspected to be suffering from pulmonary tuberculosis,

and to direct their treatment in the light of knowledge not only of their medical, but also of their domestic and industrial needs. The ideal of the dispensary implies, therefore, a careful system of domiciliary visitation and investigation.

Such visitation and investigation have already been recommended (pars. 7, 8, and 9), and it is evidently undesirable that visits to the same patients should be duplicated. When such a dispensary is already at work, arrangements can be made for nurses attached to the dispensary to visit the patients at home, and enter the information obtained by them on forms, which will subsequently be seen both by the dispensary physician and the Medical Officer of Health. These nurses in some districts will be the health visitors of the Sanitary Authority, and in such cases the domiciliary work of the dispensary becomes a sub-department of the Medical Officer of Health's work.

A well-organised tuberculosis dispensary becomes a valuable aid in securing more general notification of cases of tuberculosis; and its visitors can not only secure that domestic precautions are taken, but also that the patients are brought into touch with the different forms of domestic aid, or with the sanatorium or hospital treatment that the needs of the individual case indicate.

A tuberculosis dispensary is specially adapted for the needs of large towns. When local circumstances do not permit of its formation, similar work can be organised in connection with other dispensaries, and with the out-patient departments of hospitals, voluntary or official health visitors being employed, as circumstances permit. Whether a new organisation is started, or whether—as may sometimes be both economical and efficient—old organisations are modified and improved for the new work, the essential points are that the doctor, when treating his patient, shall have before him all the circumstances relating to the patient's manner of life likely to aid him in giving rational advice: that the patient shall receive help adapted to his social needs; and that there shall be no redundancy or lack of supervision and of the help requisite for the patient and for the protection of others against infection.

II. *Sanatorium Treatment.*

Home treatment if depended upon alone often fails to prevent infection, besides failing to cure the patient. Hence the importance of sanatorium treatment when practicable. Under Section 131 of the Public Health Act, 1875, the Sanitary Authority has power to provide such treatment for patients whether patients are in the receipt of relief or not.

Considerations of finance will need to be borne in mind, and it is to be remembered that thoroughly efficient sanatoriums for consumptives need not be built upon expensive lines. Before embarking on any large scheme, each sanitary authority should consider what it can do with arrangements already available. Some sanitary authorities have found that in the intervals of epidemics empty rooms or wards of their isolation hospitals can be utilised for the treatment of pulmonary tuberculosis, and have taken action accordingly.

In rural districts it will be practicable by the use of temporary huts or tents, erected either at the patient's home or in the grounds of the infirmary or of the isolation hospital, to treat consumptive patients with minimum expense; in other instances private houses may be adapted as hospitals for the purpose; while in some circumstances contribution towards the cost of erection and maintenance of a sanatorium jointly with others may be the best course.

With regard to the use under regulated conditions of the wards of an isolation hospital for the treatment of pulmonary tuberculosis, experience has demonstrated that this can be done with entire safety to the consumptive patient and with great success in his treatment.

The sanatorium treatment of the consumptive may be directed towards the cure of the patient, or towards such amelioration of the patient and incidental training in desirable habits as may be practicable in a shorter stay than is required for his cure.

In considering the cure of the patient by sanatorium treatment, what has already been said as to early diagnosis needs to be borne in mind. In actual experience a large proportion of poor patients cannot be cured at the stage at which their disease is first recognised, without treatment which is so protracted and so large in amount when attempted for a larger number of patients, as to be outside the range of present practical administration. Many such patients, however, either recover, or without complete recovery continue to be able to work indefinitely, even when protracted sanatorium treatment cannot be secured. Their working life can be extended and their capacity to spread infection can be stopped by an occasional stay in a sanatorium, of limited duration, say, for a month. It is on sanatorium treatment of this type for patients still able to work that stress may be laid. The patient usually does not lose his place by the short absence from work contemplated; he is willing to come into a sanatorium for such a short stay, when he would not accept more protracted treatment; and the improvement experienced during such a short stay in a sanatorium is often most remarkable. This, however, is not the only gain. When the patient enters the sanatorium his dwelling is disinfected; his relatives are relieved temporarily from a source of anxiety; and the patient while in the sanatorium is trained in the methods of disposal of sputum, and in the general hygienic regulation of his life in a practical manner that is scarcely possible at home. On his return home he is therefore no longer likely to be a source of infection, and the general hygiene of his home is almost certain to reflect the good influence of his stay in the sanatorium. From the standpoint of the sanitary authority a much larger number of patients can, in this way, be treated and prevented from becoming a source of infection, than if permanent cure of the individual patient were made the only consideration.

12. *The Institutional Treatment of Advanced Cases of Pulmonary Tuberculosis.*

A certain proportion of the total number of consumptives gradually deteriorate in health, notwithstanding every effort

made on their behalf. The patients to whom this remark applies will diminish in number when they and the general public realise the importance of early and accurate medical recognition of the causes of failure in health, especially if accompanied by cough. Under present conditions, however, it is likely that a large number of cases of pulmonary tuberculosis will continue to occur that will remain unrecognised in the early stage of disease. It does not follow, as is too often and too hastily inferred, that the total amount of tuberculous infection cannot be steadily and even rapidly diminished. The number of cases of tuberculosis at any one time, so far as the disease is derived from other human cases of the disease, must depend on the total number of similar cases from which the infection of tuberculosis can be derived, and on whether the dosage of infection suffices under the conditions of its recipients to produce disease. Evidently then the occurrence of future cases of tuberculosis, even though these measures are not adopted early in each case, can be prevented in the proportion of the extent to which measures are adopted (*a*) for preventing the patient from scattering infection by cough and expectoration, and (*b*) for keeping the patient separate from those susceptible to infection. The first aim is secured by sanatorium and dispensary training and treatment and by home visiting and advice, with the co-operation of the patient; the latter aim can be secured by providing the patient with a separate bedroom and suitable nursing at home, and, when this is impracticable, by providing efficient hospital accommodation.

In the homes of the poor, it often happens that suitable bedroom accommodation cannot be provided for advanced cases of pulmonary tuberculosis, and that the wife or other relatives in charge of the patient is overworked and thus rendered more easily a victim to the same infection. Hence, the medical attendance and nursing of a large proportion of the total advanced cases in hospitals must form an essential part of any effective scheme for preventing tuberculosis. It is to a very large extent a need already met: for though the provision of hospital beds for such cases has not, in the main, been made with any intention of diminishing the total mass of infection, it

has operated in that way. Not only in general and special hospitals but on an immensely larger scale throughout the country, and especially in our towns and cities—in which domestic overcrowding is most marked, and in which the domestic nursing of cases of pulmonary tuberculosis is therefore most dangerous—consumptives have been treated in the workhouse infirmaries, many of them under excellent conditions, and probably all of them under conditions less likely to cause spread of infection than the dwellings of the very poor and the destitute. Such arrangements need to be extended, and the hospital treatment of the bedridden consumptive in the ideal state will be made so popular that domestic infection will become much less frequent than at present.

In the preceding pages no attempt has been made to enumerate all the measures that can be utilised against tuberculosis. Nor has it been urged that when notification of cases has been secured and free bacteriological diagnosis provided, subsequent measures against the disease shall be taken in any particular order. This will necessarily vary with local needs and local possibilities. The best work will be secured if there is active co-operation between voluntary and official workers and agencies; and this remark applies particularly in securing sanatorium treatment for patients. If all the measures within the range of practical action are adopted, there is no reason to doubt that by wise administrative efforts following upon the Board's Regulations as to Tuberculosis, the decline in the number of centres of infection can be made more rapid, and thus can be secured a quicker decline in the death-rate from tuberculosis than has hitherto been experienced. Although, owing to the long duration and occasional long latency of this disease, results in regard to it cannot be measured with accuracy except after a lapse of a considerable number of years, it may confidently be expected that administrative measures will enable sanitary authorities gradually to bring tuberculosis under their control, and to secure that it shall become as much a disease of the past in this country as leprosy has become.

A. NEWSHOLME.

February, 1909.

TABLE XLI.

Deaths from Tuberculosis for Ten Years

	1908.		1907.		1906.		1905.		1904.		1903.		1902.		1901.		1900.		1899.	
	Deaths	Death Rate	Deaths	Death Rate	Deaths	Death Rate	Deaths	Death Rate	Deaths	Death Rate	Deaths	Death Rate	Deaths	Death Rate	Deaths	Death Rate	Deaths	Death Rate	Deaths	Death Rate
General Tuberculosis..	15	0.11	8	0.05	14	0.10	17	0.12	10	0.07	8	0.06	18	0.13	22	0.17	6	0.04	4	0.03
Tabes Mesenterica ...	28	0.20	36	0.26	34	0.25	27	0.20	40	0.30	28	0.21	24	0.18	35	0.27	47	0.37	20	0.15
Acute Hydrocephalus & Tubercular Meningitis	16	0.11	36	0.26	24	0.17	33	0.24	28	0.21	47	0.35	51	0.39	23	0.18	14	0.11	8	0.06
Phthisis	148	1.09	133	0.98	124	0.92	142	1.06	125	0.94	122	0.93	163	1.25	150	1.17	148	1.16	152	1.20
Other Forms	10	0.07	9	0.06	6	0.04	7	0.05	8	0.06	8	0.06	6	0.04	12	0.09	30	0.23	33	0.26
Total	217	1.60	222	1.65	202	1.51	226	1.70	211	1.59	213	1.62	262	2.0	242	1.89	245	1.92	217	1.71

FACTORIES AND WORKSHOPS.

The Factory and Workshop Act of 1901 has again been well administered during the year, and many important improvements have been carried out, especially in the factories.

There are 853 workshops, containing 1,099 rooms, of which 54 are underground, on the register for the year ending December 31st, 1908. These include 53 domestic workshops and 95 new tenants from whom notices of occupation have been received, thus showing a decrease of 66 after the register has been corrected and the factories and removals deducted.

The approximate number of males employed in these workshops is 1,675, and the number of females 1,120, as compared with 1,792 males and 1,148 females in 1907.

The inspections of the above workshops have greatly increased, and the visits to factories have decreased accordingly. The visits to factories numbered 377, and the visits to workshops 1,505, as compared with 469 and 1,056 visits respectively to factories and workshops during 1907.

A summary of 2,910 visits may be seen in Table XLIII.

The 433 defects found have been set forth in Table XLIV., of which 351 have been remedied in Table XLII., the 82 defects outstanding being chiefly in connection with sanitary conveniences in factories, many of which, it is expected, will be remedied before the close of the present year (1909).

It will be noted that the results obtained are less than during the year 1907, viz:—Defects found, 433; remedied, 351; outstanding, 82. As compared with 1907, viz:—Defects found, 384; remedied, 342; outstanding, 42. I am of the opinion that the recent trade depression has affected this work to a great extent.

I would point out that so far it has been unnecessary to resort to legal proceedings in order to get the defaulters to comply with my notices to remedy the defects found.

A summary of the defects found and remedied at factories is set forth in Tables XLV. and XLVI.

1.—SANITARY CONDITIONS OF WORKSHOPS.

(a) CLEANLINESS.

Three workshops were found to have dirty floors or windows.

No workshops were found to have dirty yards, and 76 rooms required limewashing at the Inspector's visit, as compared with 57 in 1907.

(b) AIR SPACE.

Three rooms were found to be over-crowded as compared with none in 1907.

(c) VENTILATION.

Eight workrooms were found to be deficient in ventilation compared with eight in 1907, none in 1906, 10 in 1905, 9 in 1904, 28 in 1903, and 55 in 1902.

This want of ventilation is due to the fact that gas stoves and pitch pans are placed inside workrooms, and means not provided for carrying away the fumes generated.

(d) DRAINAGE OF FLOORS ON WHICH WET PROCESSES ARE

CARRIED ON.

These processes include tripe-boiling establishments, laundries, etc., and the drainage of these floors has been so satisfactory that there has only been cause for complaint in one instance, namely, a workshop laundry recently opened.

SANITARY CONVENIENCES IN WORKSHOPS.

The following is the character of the sanitary conveniences at the various workshops :—

684	Water Closets.
211	Pail Closets.
5	Privy Middens.

These figures show some improvement as compared with 1907 :—

709	Water Closets.
220	Pail Closets.
19	Privy Middens.

Notices outstanding at the end of the year 1907 were in connection with the following requirements at 18 factories :—

Additional sanitary accommodation required	26
Repairs or reconstruction of sanitary conveniences required	73
Defective urinals	3

Other defects not enumerated here are shown in Table XLIV.

During 1908 notices for the provision of the following requirements were issued to 16 factories and 6 workshops, viz :—

Additional sanitary accommodation required at factories	21
Additional sanitary accommodation required at workshops	6
	—
	27
	—

Repairs or reconstruction of sanitary conveniences at factories	89
Repairs or reconstruction of sanitary conveniences at workshops	11
	<hr/>
	100
Defective urinals at factories	4

The following statement shows at a glance the number of additional water-closets provided, and the reconstructions carried out during 1908, and also the number of outstanding defects at the end of the year :—

	Additional Sanitary Conveniences required.	Completed during 1908.	Outstanding defects end of 1908.
At the end of 1907. F. ...	26	12	14
During 1908. F.	22	4	18
„ „ W.	6	3	3
Reconstructions required—			
At the end of 1907. F. ...	73	50	23
During 1908. F.	16	4	12
„ „ W,	12	12	0
	<hr/>	<hr/>	<hr/>
	155	85	70

Outstanding defects to sanitary conveniences at the end of the year 1908 :—

70 Sanitary Conveniences.

SANITARY CONVENIENCES IN FACTORIES.

The following appears in Section 5. Factory and Workshops Act, 1901 :—

(1) Where it appears to an Inspector that any act, neglect, or default in relation to any drain, water-closet, earth closet, privy, ashpit, water supply, nuisance, or other matter in a factory or workshop, is punishable or remediable under the law relating to Public Health, but not under this Act, that Inspector

shall give notice in writing of the act, neglect, or default to the District Council in whose district the factory or workshop is situate, and it shall be the duty of the District Council to make such inquiry into the subject of the notice, and take such action thereon as seems to that Council proper for the purpose of enforcing the law, and to inform the Inspector of the proceedings taken in consequence of the notice.

Forty-one notifications under the above (Section 5, Factory and Workshop Act, 1901) have been received from H.M. Inspectors, viz. :—Fourteen of these were for factories and 27 for workshops, as follows :—

NOTIFICATIONS FROM H.M. INSPECTOR OF FACTORIES WITH RESPECT TO FACTORIES.

GOIT-STREET.—“Arrangement of closet and seat unsatisfactory.” Notice was sent to provide a suitable sanitary convenience. Nothing done.

CLAYTON-STREET.—“No sanitary convenience for women provided.” One of the two existing sanitary conveniences situated in the yard was screened and reserved for the sole use of the females employed.

ALBERT-STREET.—“No closet provided.” A suitable water-closet was provided on receipt of notice.

WEIR-STREET.—“No sanitary accommodation provided.” Notice was sent and a suitable water-closet was provided.

CANTERBURY-STREET.—“Closet unsatisfactory—leakage of water.” The necessary repairs to the water-closet were carried out on receipt of notice.

CORT-STREET.—“Closet unventilated.” Notice was sent to carry out such work as will make the closets conform with the Factory and Workshop Act, 1901. Nothing done.

MANNER SUTTON-STREET.—“ Closet to be ventilated by a fan and duct, and tops to be covered.” No notice sent. Closets altered previously to my satisfaction.

KING-STREET.—“ Closet unsatisfactory.” No notice sent. Closet satisfactory at the time of Inspector’s visit.

LORD-STREET WEST.—“ Three females and eight males employed. Only one W.C. provided, and that requires repair. Separate accommodation to be provided.” Notice was sent to the owner to provide a separate sanitary convenience for the females, and repair the existing sanitary convenience. Nothing done.

HIGHER ROYSHAW.—“ No closet.” A pail-closet was provided on receipt of notice. There was no adjoining sewer.

BACK CORT-STREET.—“ Tub-closet adjoining street, not sufficiently screened ; door for removal of tub broken off. Seat and walls of closet dirty ; requires cleansing and lime-washing.” No notice sent. Notices have been issued previously, requiring suitable sanitary accommodation to be provided for the use of the occupiers of this building, but nothing has been done.

HART-STREET.—“ Sanitary conveniences insanitary by reason of insufficient ventilation and untrapped soil-pipe and darkness. There was effluvia in the workroom at the time of visit.” Notice sent to abolish the existing insanitary conveniences and provide five new water-closets of approved type in a position suitable for connection to the sewer. Nothing done.

NORTHGATE.—“ The convenience used by the women is insanitary in that it is insufficiently lighted and ventilated.” Notice was sent to abolish the existing insanitary convenience and provide a new one in a suitably-lighted and ventilated position. Nothing done.

LORD-STREET WEST.—“ There is not separate sanitary accommodation for the sexes.” This notice is covered by a previous one.

In addition to the above notifications received from H.M. Inspectors, the following complaints have been sent to me by other persons, and have been investigated by my Inspector.

GUIDE.—“ Sanitary accommodation defective.” Notice was sent to provide seven additional water-closets, to convert the five existing troughs to modern water-closets, provide urinal accommodation and disconnect all the conveniences from the workrooms. Nothing done.

GORSE-STREET.—“ Sanitary accommodation defective.” Notice was sent to provide suitable flushing cisterns to the water-closets. Not completed.

PATERSON-STREET.—“ No sanitary accommodation for females.” Notice was sent to provide a suitable water-closet for females, but this work has not yet been carried out.

HALL-STREET.—“ Nuisance arising from water-closets.” Notice was sent to open and cleanse the drain, repair the flushing apparatus, and rebuild the wall forming the intervening space. Completed.

HART-STREET.—“ Sanitary accommodation defective.” A notification has been received from H.M. Inspector respecting this mill when a notice was sent requiring new closets to be provided and the existing ones abolished.

CANTERBURY-STREET.—“ Sanitary accommodation not provided.” Notice was sent to provide a separate sanitary convenience for the males and females employed. In hand.

The following is a list of outstanding notices at the end of the year 1907, and work carried out during 1908 in connection with factories.

QUARRY-STREET.—“ Sanitary accommodation insufficient—seven for 233 females.” Notice was sent to provide and maintain in good working order three additional water-closets. This work has not yet been completed.

STANLEY-STREET.—“ Sanitary accommodation insufficient—five for 145 females and four for 137 males. Notice was sent to provide three additional water-closets and take out the defective and insanitary pan-closet and provide a pedestal wash-down closet in its stead. Owing to a change in the number of employees, the existing accommodation was sufficient. The defective pan-closet has been replaced by a pedestal wash-down water-closet, which completes the work required to be done.

OAK-STREET.—“ Sanitary accommodation insufficient—two for 73 females.” Notice was sent for one additional convenience to be provided and the existing conveniences to be converted to pedestal water-closets. As the mill has been altered it has not been necessary to provide additional accommodation, but the existing accommodation has been converted to pedestal wash-down water-closets, a urinal provided, and the necessary work completed.

MARY-STREET.—“ Sanitary accommodation insufficient—five for 160 females and four for 124 males. Condition not examined.” Notice was sent to convert the trough closets to water-closets, and provide three additional water-closets. The necessary work will be commenced shortly.

COBDEN-STREET.—“ Sanitary accommodation defective, no doors or partitions to weavers' closets, and number insufficient, three seats for 112 females.” Notice was sent and the whole of the erection was reconstructed, three water-closets and urinal being provided for males, and five water-closets for females.

EANAM.—“ Sanitary accommodation insufficient—three for 124 females. Notice was sent to provide two additional

water-closets, to convert the existing insanitary trough closets to pedestal wash-down closets of an approved type, and to repair the structure of the conveniences and screen urinal. This work has not yet been started.

SIMMONS-STREET.—“A stable within the factory.” Notice has been sent to discontinue stabling horses within the factory. A new situation has been found for stables, but building operations have not yet commenced.

WILLOW-STREET.—“Sanitary accommodation defective. No doors to women’s closets and insufficient—three for 77 males and five for 183 females.” Notice was sent to provide four additional water-closets and to convert and reconstruct the existing defective closets to those of modern type. Two new water-closets have been erected for the females.

COBDEN-STREET.—“Sanitary conveniences not separate from mule rooms.” Notice was sent to provide intervening ventilated spaces to three water-closets on the 2nd, 3rd, and 4th floors. To light and ventilate the water-closets, to take out short hopper and three long-hoppers and replace by pedestal wash-down W.C.’s. To limewash walls and tops of W.C.’s. To arrange that the two water-closets on first floor be used by females only. The two water-closets have been reserved for the use of females only, a new W.C. has been provided for the males, and one of the three water-closets in the mule-rooms has been disconnected. The other work is under consideration.

BACK CORT-STREET.—“Sanitary conveniences are unsatisfactory.” Notices have been sent, but the work has not been started.

MOSS-STREET.—“Sanitary accommodation defective. These are very bad. They communicate directly with the hot-shed into which air is drawn through them by extracting fans. There are no separate doors.” Notice sent to

provide three additional W.C.'s, to convert and reconstruct existing W.C.'s, so that there will be eight for 185 females and five and urinal for 117 males.

HARWOOD-STREET.—“ Sanitary accommodation insufficient—four for 140 females, four for 98 males.” Notice was sent to provide four water-closets of an approved type for the 100 female weavers. This work is now in hand and will be commenced shortly.

DAISY-STREET.—“ Sanitary accommodation insufficient—three for 119 females; three for 74 males.” Notice was sent to provide two additional W.C.'s for females; also convert the whole of the W.C.'s to those of approved type and repair division walls. Completed.

BOXWOOD-STREET.—“ No doors provided for closets.” Notice was sent to convert pail-closets to approved water-closets. Now completed, eight pedestal W.C.'s and two urinals having been provided.

ALBERT-STREET.—“ Sanitary accommodation not provided. Notice was sent and a pail-closet was provided.

LOWER DARWEN.—“ Insufficient closet accommodation for males, and the accommodation for females is not separate and distinct.” Notice sent and approved accommodation has been provided; four for males, one for females, and one for office staff.

NOTIFICATIONS FROM H.M. INSPECTOR OF FACORIES WITH RESPECT TO WORKSHOPS.

MONTAGUE-STREET.—“ Workroom appears to require limewashing.” Limewashed on receipt of notice.

OOZEHEAD-LANE.—“ Walls and ceiling of workshop appear to require limewashing.” Limewashed on receipt of notice.

WHALLEY BANKS.—“ Back room on first floor is in a dilapidated state, the ceiling being apparently unsafe, whilst staircase leading thereto appears to require cleaning and limewashing.” Ceiling rendered safe, broken plaster repaired and staircase limewashed on receipt of notice.

DUKE'S BROW.—“ Bakehouse appears to require limewashing.” No notice sent. Found bakehouse limewashed since the Inspector's visit.

MOSS-STREET.—“ Bakehouse does not appear to be sufficiently ventilated.” Ventilator provided in roof of bakehouse on receipt of notice.

BARLEY-LANE.—“ No closet provided.” Notice sent to make the existing pail-closet suitable by providing a door to the pail cavity and fixing fastenings to the closet door. Also to cleanse the seat-board and limewash the internal surface of the walls. Nothing done.

WHALLEY BANKS.—“ Ceiling of workshop is in a defective state, and also appears to require limewashing.” Necessary work carried out on receipt of notice.

VERNON-STREET.—“ Workroom appears to require cleansing and limewashing.” Limewashed on receipt of notice.

VERNON-STREET.—“ Sanitary convenience is in an unsatisfactory state. Open gully in floor from which offensive smell arises.” The offensive gully was cleaned out and properly sealed. The unsatisfactory condition of closet not remedied. No notice sent.

WHALLEY RANGE.—“ Workshop appears to require limewashing.” Walls and ceiling of workshop limewashed on receipt of notice.

NORTHGATE.—“ Ceiling of workroom is in a broken state.” Repaired forthwith.

KING-STREET.—“ Workroom does not appear to be sufficiently ventilated.” No notice sent.

SUDELL CROSS.—“ Top workroom in which woman machinist is employed, appears to require cleansing and limewashing.” All the workrooms cleansed and limewashed on receipt of notice.

CLAYTON-STREET.—“ Workroom does not appear to be sufficiently ventilated. Workroom appears to require limewashing.” A ventilator was fixed in the outside wall and walls and ceiling limewashed.

CHAPEL-STREET.—“ Sanitary accommodation not provided.” Notice was sent, and a pedestal wash-down water-closet was provided.

KING WILLIAM-STREET.—“ Suitable sanitary conveniences not provided for females.” Satisfactory arrangements have been made for the females employed to use the sanitary convenience in the yard. No notice sent.

CORT-STREET.—“ Workroom appears to require limewashing.” Notice was sent and the workroom was limewashed forthwith.

LORD-STREET.—“ Workroom does not appear to be sufficiently ventilated.” Notice was sent to provide suitable means of permanent ventilation.” In hand.

KING WILLIAM-STREET.—“ Workroom appears to require limewashing.” Workroom walls, ceiling and staircase limewashed on receipt of notice.

BIRLEY-STREET.—“ Sanitary accommodation not provided.” A water-closet was in course of construction at the time of Inspector's visit. No notice sent.

CLAYTON-STREET.—“Sanitary accommodation not provided.” Notice was sent to provide suitable sanitary convenience. Work in hand.

FELDEN-STREET.—“Workshop appears to require lime-washing.” Notice was sent and the walls and ceiling were scraped and limewashed forthwith.

BOLTON-ROAD.—“Workshop appears to require cleansing and limewashing.” The walls and ceiling were scraped and limewashed on receipt of notice.

NEW BANK-ROAD.—“There is no means for the removal, from workroom, of the fumes arising from gas stove used for heating irons.” Notice was sent to provide cover suitably connected to chimney. In hand.

AUDLEY RANGE.—“Bakehouse appears to be overcrowded—three workers employed therein.” Notice was sent to abate overcrowding, and the occupiers are now looking for another residence.

NORTHGATE.—“Sanitary accommodation not provided.” Notice was sent and a suitable water-closet is now in course of erection.

KING-STREET.—“Limewashing of bakehouse overdue, the last date being May 12th, 1908.” Notice was sent to lime-wash the walls and ceiling of bakehouse. Not completed.

UNDERGROUND ROOMS.

There are 54 underground workrooms in the Borough, including those used by bakers, retail bakers, etc., as compared with 51 in 1907.

BAKEHOUSES.

There are 134 names on the Workshop Register as bakers, which include wholesale bakers, retail bakers, domestic retail bakers, and sugar-boilers.

They occupy 160 rooms, of which eight are underground.

123 males and 186 females are employed in the baking industry of this town.

In 15 bakehouses both sexes are employed, showing an increase of three as compared with 1907.

46 notices have been issued with regard to insanitary conditions and defects.

UNDERGROUND BAKEHOUSES.

There were 21 underground bakehouses in the Borough at the end of 1903, which, under Section 101 of the Factory and Workshop Act, 1901, were reduced to 12 during 1904, and which have been further reduced to 6, consisting of 7 rooms at the end of 1906. No change has been made since that time, as they were made satisfactory to the Sanitary Authority.

In use at the end of 1903	21
Closed during 1904	9
.. .. 1905	5
.. .. 1906	1
.. .. 1907	0
.. .. 1908	0
	—
	15
	— 15
	—
In use at the end of 1907	6

During the year 1908, two underground bakehouses were found to be occupied illegally as such, and notices were immediately served for them to be closed. One was complied with at once, and the other is, at present, under consideration.

LIGHTING OF WORKSHOPS.

The lighting of 560 workshops is over 1·70th of the total cubic space.

WORKPLACES.

The term "Workplace" is not defined in the Act, but it includes any place where work is done permanently, and where people assemble together to do work permanently of some kind or other.

It also includes places where two or more persons meet regularly to perform some work, such work not being in the making, altering, repairing, ornamenting, finishing, or adapting for sale of any article.

In connection with these places, 227 visits have been made for the purpose of seeing that the provisions of the Factory and Workshop Act had been complied with, and 18 notices were sent recommending the following 23 defects to be remedied :—

- 2 Defective W.C.'s repaired, replaced, or reconstructed.
- 2 Defective connections and fittings to W.C.'s.
- 3 Defective urinals and soil-pipes repaired.
- 1 Defective drains relaid.
- 1 Choked drains (opened and cleansed).
- 2 Defective sink waste-pipes repaired.
- 1 Inside floors, etc., badly flagged (repaired).
- 2 Yards and cellars cleansed.
- 2 Internal walls and ceilings of rooms limewashed.
- 2 Internal floors, windows and walls of rooms cleansed.
- 2 General repairs not detailed.
- 3 Accumulations of refuse and other debris removed.

23

FOOD-PREPARING CASES.

Under this heading are included all pork butchers' shops and other places (not including workshops) in which meat-pies, black-puddings, sausages, potted meats, tongues, etc., are prepared for human consumption.

During the year 141 visits have been paid to these places as compared with 41 in 1907.

RESTAURANTS.

The kitchens of restaurants, hotels, and dining-rooms are included in the definition of "Workplaces," which is a term used in the Factory and Workshop Act, 1901.

The power to inspect these places is given in the Public Health Act (Sections 2 and 47). and in the Factory and Workshop Act (Section 2).

The inspection of these places has been included in the visits to the food-preparing places.

THE RECORD OF OUTWORKERS.

The necessary lists are not sent in at all regularly as required by law.

Full references have been made to this subject in my previous reports.

FACTORY AND WORKSHOP ACT

(7 Edw. 7 ; Chap. 39).

This is an "Act to amend the Factory and Workshop Act, 1901, with respect to the laundries, and to extend that Act to certain institutions and to provide for the inspection of certain premises."

Section 1 applies the Act of 1901 to "laundries carried on by way of trade or for the purposes of gain, or carried on as an auxiliary to another business, or incidentally to the purpose of any public institution."

Section 2 regulates the hours of employment of women and young persons in laundries; whilst Section 3 specifies certain special regulations to be complied with in laundries. Section 5 applies the Act to institutions carried on for charitable or reformatory purposes; and Section 6 provides for Government inspection of laundry premises.

This Act came into operation on the 1st January, 1908.

MARINE STORE DEALERS.

The improvement made last year and the year 1906 has apparently been maintained during the present year with regard to occupiers paying attention to the removal of bones before they become offensive.

Many of these bones are either collected or brought from local butchers, and include the heads of animals with portions of flesh attached.

They are sometimes stored in the premises for several days, and as they decompose cause a great nuisance, especially if the weather is hot and close.

The similar storage of filthy rags or other refuse upon the same premises adds to the nuisance.

Conditions such as these, together with the fact that the premises at present used are not altogether suitable, render the trade a difficult one to regulate efficiently.

In this connection also I would deprecate the custom of hawking salt which has been in contact with rags, etc., during the day and which is stored in unwholesome places at night. Much has been done to try and lessen the evil which may arise by requesting the dealers to store salt in a separate place from the rags, stones, etc., etc., and by informing the hawkers in the streets that they must provide and keep a covered box for the salt on the barrows or carts, so as to separate it from the rags, etc.

That part referring to hawkers will not be properly controlled until it is made compulsory to provide a suitable covered box in which to store their small quantity of salt.

Many of the marine storekeepers have been asked their opinion as regards the hawking of salt by the rag gatherers, and have stated that they do not encourage the trade, and would welcome any printed notice from the Medical Officer of Health forbidding the rag gatherers to carry salt on their conveyances.

I would again bring before your notice the opinion that it would be a great advantage if all marine store dealers were subject to registration, and if bye-laws were made for regulating the duration of the licence.

Insanitary conditions on their premises could then be dealt with more effectually.

During the year it has been necessary to give notice to one marine store dealer to remove an accumulation of rubbish from premises vacated by him. Other notices issued are one for a blocked drain and another to provide sanitary accommodation.

It is very desirable that all marine stores should be subject to Section 112 of the Public Health Act, *i.e.*, that before a person can open a marine store he must obtain the written consent of the Council upon the recommendation of the Medical Officer of Health, such as applies to offensive trades.

The following power was obtained in the Blackburn Corporation Act of 1908 with reference to dealers in ice-cream, inspection of ice cream premises, and infectious diseases amongst ice cream dealers :—

Section 61.

Every dealer in ice cream or other similar commodity vending his wares from any cart, barrow, or other vehicle or stand, must have his name and address legibly painted or inscribed on such cart, barrow, vehicle, or stand, and if he fails to comply with this enactment he shall be liable to a penalty not exceeding forty shillings.

Section 62.

(1) Any officer duly authorised by the Corporation in that behalf shall at all reasonable times have the same power of entry and inspection into and of the premises of any manufacturer, or vendor of, or merchant, or dealer in ice cream, and other

similar commodity for the purpose of inspecting such premises and the materials, or commodities, or articles of food, therein, as an officer of the Corporation would have under Section 102 of the Public Health Act, 1875, in cases therein mentioned.

(2) Any person refusing entry into such premises as aforesaid or obstructing such officer as aforesaid in the execution of his duty shall be liable to a penalty not exceeding forty shillings for each offence.

Section 63.

In the event of any inmate of any building (any part of which is used for the manufacture of ice cream or any similar commodity) suffering from any infectious disease, the Medical Officer of Health may seize and destroy all ice cream or similar commodity or materials for the manufacture of the same in such building, and the Corporation shall compensate the owner of the ice cream or similar commodity or materials so destroyed.

The ice cream vendors have been notified to this effect.

OFFENSIVE TRADES.

There are 18 establishments in the Borough in which offensive trades are carried on. They are as follows:—

Tripe dressers	8
Fat melters	5
Gut scrapers	2
Bone boiler	1
Knackers	2
	—
	18

Notices were sent with respect to the following nuisances in connection with offensive trades:—To remove accumulation of hoofs and manure from two tripe works. To repair joint of drain to pedestal w.c. at a tripe works. The notices were complied with at once.

The following power was obtained in the Blackburn Corporation Act of 1908, with reference to establishing a new business.

Section 67.

For the purpose of Section 112 of the Public Health Act, 1875, a trade, business or manufacture shall be deemed to be established anew not only if it is established newly but also if it is removed from any one set of premises to any other premises, or if it is renewed on the same set of premises after having been discontinued for a period of six months or upwards or if any premises on which it is for the time being carried on are enlarged without the sanction of the Corporation, but a trade, business or manufacture shall not be deemed to be established anew on any premises by reason only that the ownership of such premises is wholly or partially changed or that the building in which it is established having been wholly or partially pulled down or burnt down has been reconstructed without any extension of its area.

TABLE XLIII.—SUMMARY OF VISITS DURING 1908.

	January	February	March	April	May	June	July	August	September	October	November	December	Total
Factories.....	17	11	23	27	19	24	54	20	32	85	40	25	377
Workshops	29	55	160	161	180	171	140	52	163	206	98	90	1505
Workplaces	6	4	17	5	10	21	25	9	45	36	27	22	227
Outworkers .....	...	25	9	3	15	1	...	13	3	...	...	...	69
Offensive Trades	1	6	3	1	8	12	23	6	12	15	5	13	105
Complaints—Nuisances Investigated.....	2	2	8	7	5	7	10	11	6	5	5	8	76
Food-preparing and Storing Places.....	...	1	14	2	9	16	18	14	10	21	9	27	141
Work in Progress.....	9	8	22	26	51	43	40	21	38	35	43	37	373
Drains Tested	3	2	3	1	2	1	17	2	1	1	3	1	37
Total	67	114	259	233	299	296	327	148	310	404	230	223	2910

TABLE XLII.

1908.—NUISANCES REMEDIED.

	Factories	Workplaces	Out Workers and Contractors	Tailors	Dressmakers	Milliners	Cloggers	Bootmakers	Curriers and Saddlers.	Cabinet Makers and Carvers	Joiners and Masons	Bakers, Confectioners and Sugar Boilers	Basket Makers	Black and White Smiths	Blind and Chair Makers	Brushmakers	Chemists and Photographers	Coopers and Coach-builders	Cotton Waste Sorters and Upholsters	Scale Makers and Cycle Makers	Hosiery, Underclothers and Shirtmakers	Polishers and Picture Framers	Painters and Plumbers	Printers and Paper Bag Makers	Wireworkers and Tinner.	Wheelwrights	Offensive Trades and Marine Stores	Food Preparers	Miscellaneous	TOTALS
Additional W.C.'s Provided	55									1		1																	1	58
Separate Sanitary Accommodation Provided for the Sexes	1			1																										2
Defective W.C.'s Repaired, Re-placed, or Reconstructed.....	56	2		3				1	1	1		2															2			68
Water Closets Lighted and Ventilated																														
Defective Connections and Fittings W.C. Flush Pipe to Pan, Repaired	1	2		1	1		3	1		2	1	5						2	1			1		1		1	1		1	25
Defective Urinals and Soil Pipes Repaired	13	3																						1						17
Closets Cleansed, Pans Cleansed, Walls and Tops Limewashed	1			2						2				1		1				1	1	1			1	1	1			13
Defective Drains (re-laid)		1						1				2																		4
Choked Drains (opened and cleansed)	2	1		1	1	1						4					1		1						1		1			14
Defective Trap Gallies and Dish Stones Replaced																														
Defective Sink Waste Pipes Repaired (short).....		2			1		1								1															5
Defective Easing Troughs and Downspouts, Repaired	1				1			1																			1			4
Yards and Cellars Re-flagged					1							1																		2
Inside Floors and Yards Badly Flagged or Paved, Repaired		1	1				2					6																1	2	13
Yards and Cellars Cleansed		2																												2
Internal Walls and Ceilings of Rooms Limewashed		2	2	10	4	1	7	7	4	2		23	2			2			1		2	1		1	2			1	2	76
Internal Floors, Windows and Walls of Work Rooms Cleansed		2		1			1					2																		6
Number of Rooms Ventilated				2	1							3															1			7
General Repairs not Detailed.....	1	2		3			1	1	1			4	1																	17
Ash Receptacles Provided												1													1				1	1
Accumulations of Refuse and other Debris Removed		3	1	1		1						1							1				1					4	1	14
Overcrowding Abated				1								1																		1
Illegal Occupation of Underground Bakehouse discontinued												1																		1
Sleeping Apartment in Bakehouse given up												1																		1
No. of Defects Found, 433 ; Remedied, 351	131	23	4	26	10	3	15	12	6	8	1	57	3	1	1	3	1	2	5	1	2	3	1	4	4	2	11	4	7	351

Table XLIV.

	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	
Particulars of Registers and Nuisances Found.	Factories.	Workplaces.	Outw'ks & C'tacts	Tailors.	Dressmakers.	Milliners.	Cloggers.	Bootmakers.	Curriers & Saddlers	Cabinet Makers and Carvers	Joiners & Masons	B'krs, Confectioners and Sugar Rollers.	Basketmakers	Black & White Smiths	Blind and Chairmakers	Brushmakers	Chemists and Photographers	Coopers and Coachbuilders	Cotton Waste Sorters and Upholsters	Scale Makers and Cycle Makers	Hosiery, Underclothing, Shirtmakers	Polishers and Picture Framers.	Painters & Plumbers	Printers and Paper Bag Makers	Wirew'ks & Tanners	Wheelwrights	Offensive Trades and Marine Stores	Food Preparers	Miscellaneous	Total.	
No. of Workshops on Register	58	78	100	48	75	84	11	29	38	134	5	25	7	13	9	7	7	7	7	31	13	32	5	18	10	23	10	34	91
No. of Rooms	62	113	124	53	90	96	16	44	41	152	5	28	12	22	17	10	8	9	39	18	37	5	22	18	49	20	51	116	
No. of Underground Rooms	1	9	12	1	8	1	1	1	2	1	1	1	1	9	1	1	1	2	2	5
Avg. No. of Males employed	73	306	..	..	155	185	39	101	110	123	26	88	15	47	23	23	11	21	5	36	63	1	65	46	79	25	82	174	
Avg. No. of Females employed	65	94	415	168	..	3	..	3	..	186	7	3	20	..	3	1	146	20	1	9	6	9	3	40	118
No. employing both sexes	15	38	..	..	..	3	..	1	..	15	..	..	1	2	6	..	1	..	3	..	..	1	..	8	1	6	9	55	
No. of rooms badly lighted	47	74	26	23	37	2	27	25	72	2	20	9	14	7	8	5	3	..	22	12	2	12	8	39	8	30	55	
No. of rooms badly ventilated	1	1	..	..	1	..	1	..	3	..	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	8	
No. require lime-washing or cleansing	1	2	2	11	3	..	7	7	2	2	1	26	1	..	..	1	..	..	1	..	2	..	..	..	1	1	..	2	3	7
No. of dirty floors or windows	1	..	..	..	..	..	..	..	2	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	
No. of yards and floor surfaces in bad repair	..	1	1	1	1	..	2	1	..	..	..	9	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	1	1	1
No. of drains defective	..	2	..	..	..	..	..	1	..	..	..	1	..	..	..	..	1	..	1	..	..	..	..	..	..	..	1	..	..	1
No. of Drains blocked	3	..	..	1	1	1	..	..	..	..	..	4	..	..	..	..	..	..	1	..	..	..	1	..	..	..	1	..	..	1
No. of insufficient downspouts and defective drainage	1	..	..	..	1	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
No. of defective slop pipes	..	2	..	..	1	..	1	..	..	..	..	..	..	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
No. of defective gullies & dish stones.	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1
No. of gullies & drains inside places..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	
No. of accumulations of refuse	..	3	1	1	..	1	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	..	1	..	..	..	..	5	1	1

SUMMARY OF WORK REQUIRED AT FACTORIES.

TABLE XLV.

Notices outstanding and remedied during 1908.

Folio.	Factory situated at	Additional Conveniences required	Result		Existing insanitary closets	Converted to modern water-closets	Defective urinals	Urinals Replaced or repaired	No. sanitary conveniences to be disconnected from workroom	
			No. W.C's provided	No. not provided					Done	Not done
1	Quarry street	3	...	3	6 troughs	...	...	...	...	...
2	Stanley street .....	...	...	...	1 pan	1 ped.	...	...	...	...
2	Oak street.....	...	...	...	4 pails	4 peds.	...	...	...	...
3	Mary street	3	...	3	9 troughs	...	...	...	...	...
5	Cobden street	2	2	...	4 troughs	8 peds.	...	1	...	...
7	Eanam	2	...	2	6 troughs	...	1	...	...	...
9	Simmons street .....	...	...	...	...	...	...	...	...	...
12	Willow street	4	2	2	8 troughs	...	1	...	...	...
14	Foundry hill .....	...	...	...	3 troughs	Now closed	1	...	...	...
16	Cobden street .....	...	...	...	1 s. hop. 3 l. hops.	1 ped.	...	...	...	3
16	Back Cort Street...	1	...	1	1 pail	...	...	...	...	...
17	" "	1	...	1	1 pail	...	...	...	...	...
18	Moss street	4	4	...	4 privies 5 troughs	13 peds.	...	1	13	...
19	Harwood street	2	...	2	2 s. hop.	...	...	...	...	...
19	Daisy street	2	2	...	6 pans	8 peds.	...	1	...	...
19	Boxwood street .....	...	...	...	6 pails	8 peds.	...	2	...	...
20	Albert street	1	1	...	...	1 pail	...	...	...	...
20	Lower Darwen.....	1	1	...	3 pails	6 peds.	...	...	...	...
	18 Factories	26	12	14	73	50	3	5	13	3

SUMMARY OF WORK REQUIRED AT FACTORIES.

TABLE XLVI.—Notices Issued during 1908.

Inspection Book Folio	Factory situated at	Additional Conveniences required	Result		Existing insanitary closets	Converted to modern water-closets	Defective urinals	Urinals replaced or repaired	No. sanitary conveniences to be disconnected from work	
			No. W.C.'s provided	No. not provided					Done	
21	Guide	7	...	7	5 troughs	...	1	..	...
21	Infirmay Street ...	...	...	...	...	...	...	...	...
21	Gorse Street .....	...	...	...	...	...	...	...	...
21	Goit Street.....	1	...	1	1 pail	...	...	...	...
22	Albert Street.....	1	1	...	None	1 ped.	...	...	...
22	Clayton Street	1	1	...	None	1 ped.	..	..	...
22	Weir Street	1	1	...	None	1 ped.	...	...	...
22	Canterbury Street...	...	...	...	1 ped.	...	...	1	...	
22	Cort Street.. .....	...	...	...	2 ped.	...	..	...	...
22	Lord Street West...	1	...	1	...	...	...	...	...
22	Royshaw.....	1	1	...	...	1 pail	...	...	...
23	Paterson Street.....	1	...	1	...	...	...	...	...
23	Hall Street.....	...	...	...	..	...	...	4	4	
23	Hart Street..	5	...	5	4 troughs 2 privies	..	3	...	...
23	Northgate .....	..	...	...	1 w. down	...	...	...	..
24	Canterbury Street...	2	...	2	None	...	...	...	...
<hr/>										
16 Factories		21	4	17	16	4	4	5	4	

TABLE XLVII.

Copy of Table sent to the Home Office at the request of the Secretary of State.

ANNUAL REPORT OF THE MEDICAL OFFICER OF HEALTH FOR
1908 for the County Borough of Blackburn.

Factories, Workshops, Workplaces, and Homework.

1.—Inspection.

Including Inspections made by Sanitary Inspectors or Inspectors of Nuisances.

Premises.	Number of		
	Inspections.	Written Notices.	Prosecutions
Factories (including Factory Laundries) ...	377	26	...
Workshops (including Workshop Laundries) ...	15'5	150	...
Workplaces (other than Outworkers' Premises included in Part 3 of this Table)	227	18	...
Total	2109	194	...

2.—Defects Found.

Particulars.	No. of defects.				No. of prosec't'ns
	Found	Remedied	R'ferred to H.M. Inspector		
<i>Nuisances under the Public Health Acts—</i>					
Want of cleanliness	79	84*	...	...
Want of ventilation	8	7*	...	...
Overcrowding	3	1	...	...
Want of drainage of floors ... ..	...	...	...	...
Other nuisances	99	91*	...	...
Sanitary accommodation { insufficient	54	58*	...	...
{ unsuitable or defective ..	172	106*	...	...
{ not separate for sexes ...	3	2	...	...
<i>Offences under the Factory and Workshop Act—</i>					
Illegal occupation of underground bakehouse... (S. 101)	2	1	...	...
Breach of special sanitary requirements for bakehouses (SS. 97 to 100)	1	1	...	..
Other offences: Sec. 133 (Excluding offences relating to outwork which are included in Part 3 of this Table)...	12	...	12	...	
Total	433	351	12	...	

*These numbers include defects remedied during 1908, but found during 1907.

TABLE XLVII.—*continued.*

4.—REGISTERED WORKSHOPS.

Workshops on the Register (s. 131) at the end of the year.....		
Important classes of workshops, such as workshop bake-houses, may be enumerated here.	Various Trades	729
	Workshop Bakehouses..	71
	Domestic Retail Bake-houses (53)	
Total number of Workshops on Register		853

5.—OTHER MATTERS.

Class.		Number.
Matters notified to H.M. Inspector of Factories :—		
Failure to affix Abstract of the Factory and Workshop Act (s. 133)		12
Action taken in matters referred by H.M. Inspector as remediable under the Public Health Acts, but not under the Factory & Workshop Act (s. 5)	Notified by H.M. Inspector	41
	Reports (of action taken) sent to H.M. Inspector	32
Other .....		...
Underground Bakehouses (s. 101) :—		
Certificates granted during the year .....		...
In use at the end of the year		6

COTTON OPERATIVES' MORTALITY STATISTICS.

The following Tables show the death-rates amongst those persons engaged in the Cotton Industry of Blackburn for several years, 1889 to 1907, and also for the year 1908. The rates for the years 1893 to 1896 have been calculated from the 1891 census figures. The rates for the years 1897 to 1901 have been calculated from the 1901 census figures, including those operatives who were formerly in the cotton trade but who had retired.

The rates for the years 1902 to 1908 have been calculated from the 1901 census figures also, but with the addition of those cotton operatives who were included with the extension of the Borough in 1901.

The compilation of these statistics year by year is proving of great value in enabling one to draw certain conclusions based upon the observations of a considerable number of years. I devoted considerable space to this section in my Annual Report for 1906.

The age-periods in these Tables represent the five decades from 15 to 65 years, and the period "65 years and upwards."

The most useful figures are those given in the various decades from 15 to 65 years, since in the age-period "65 years and upwards" the number of deaths is large, owing to the inclusion of retired cotton operatives. This affects males more than females.

All the figures have been revised and corrected since the year 1889.

In the following figures the cotton operatives have been divided into these four groups :—

- I. Weavers.
- II. Spinners.
- III. Winders, Warpers, etc.
- IV. Cardroom-hands.

Also the deaths and death-rates have been calculated from three points of view, namely :—

- (a) Death-rates for 1908 compared with death-rates for the years 1889 to 1908.
- (b) Phthisis death-rates for 1908 compared with Phthisis death-rates for the years 1889 to 1908.
- (c) Death-rates from Other Respiratory Diseases for 1908 compared with the death-rates from Other Respiratory Diseases for the years 1889 to 1908.

In comparing Table LI. with Table LVII., it will be seen that the year 1908 represents a favourable record against the years 1889 to 1908.

The other Tables indicate that the improvement in death-rates from Phthisis and Other Respiratory Diseases amongst the Cotton Operatives of Blackburn is being maintained.

During 1908, the Phthisis death-rate amongst Spinners from 45 to 65 increased, but these figures are too small from which to draw any safe conclusions.

In my last Annual Report I mentioned that during the year 1907 the Home Secretary had appointed a Departmental Committee to inquire into the subject of artificial humidity in cotton-weaving factories.

The following is a Summary of the recommendations of that Committee :—

In the opinion of the Committee, the comfort and probably the health of the workers in cotton cloth factories can best be secured by the adoption of the following recommendations :—

(1) That in view of the generally-expressed opinion of physiologists that the health and comfort of the workers is dependent on the wet-bulb temperature, rather than on the dry-bulb temperature, or the relative, or the absolute humidity, a limit of

temperature on the wet-bulb thermometer be fixed at which all admission of artificial humidity shall cease. this limit to be decided by early experiments and to be the lowest necessary for efficient weaving.

(2) That the present schedule of humidity be amended by eliminating all temperatures above the maximum wet-bulb reading to be hereafter determined and all temperatures below 50deg. F., on the dry bulb, and that a minimum difference between the readings of the wet and dry-bulb thermometers be fixed when the maximum wet-bulb temperature has been decided.

(3) That with a view to encouraging the abolition of the use of artificial humidity, the standard of ventilation in humid sheds be altered from nine to twelve volumes of carbon dioxide in 10,000, or eight volumes in excess of the outside air, whichever is the greater, during daylight, and, pending the result of further investigation, to twenty volumes in 10,000, or sixteen volumes in excess of the outside air, whichever is the greater, during the period of the day affected by the use of gas or oil for illuminating purposes.

(4) That in "dry" sheds (in which there has hitherto been no standard) a standard of 15 volumes of carbon dioxide in 10,000, or 11 volumes in excess of the outside air, whichever is the greater, be adopted during daylight, and, pending the result of further investigation, 23 volumes in 10,000, or 19 volumes in excess of the outside air, whichever is the greater, during the period of the day affected by the use of gas or oil for illuminating purposes.

(5) That following the precedent of regulations relating to the spinning and weaving of flax and tow, the spinning and weaving of hemp and jute, and wool-sorting, provision be made to prevent direct and cold draughts from impinging on the workers.

(6) That a standard of purity be fixed for water to be used for the purpose of humidifying.

(7) That in places where there are no cloak-rooms, better arrangements be made for the accommodation of the clothing of the workers.

(8) That in order to secure general confidence, the readings of the thermometers be taken jointly by representatives of the employer and employed, and that a statement relating to these readings be entered in a register to be kept at the works and to be examined by H.M. Inspectors of Factories, but that records be sent to the Home Office only when irregularities are found, and that the practical details be settled by conference between official representatives of the Manufacturers' and Operatives' Associations.

(9) That power be given to the Secretary of State to prescribe a standard hygrometer, that distilled water only be used, kept sufficiently long in the shed to acquire the shed temperature, and that provision be made to prevent the wet-bulb moisture affecting the dry-bulb thermometer.

(10) That the present understanding in regard to the size of steam-pipes be continued until after further inquiry, and that more attention be paid to the efficiency and maintenance of the non-conducting covering.

(11) That the law relating to cleanliness of the floors and walls be more rigidly enforced.

(12) That the whitewashing of the roofs be more efficiently carried out so as to cover every part of the roof, including the glass of the windows, that the provision be made compulsory for all weaving sheds and that the period be extended to the 30th September in each year.

(13) That Section 95, relating to legal proceedings, be amended by extending the period of 12 months to 24 months.

It is anticipated by the Committee that their recommendations in regard to the standard of ventilation will by some be considered retrograde. In their decision they have been influenced by the evidence of eminent physiologists and by the personal experiences of the vast number of operatives immediately concerned, and they are of opinion that, although it is desirable to approximate as nearly as possible to natural condi-

tions, yet when trade exigencies do not permit of this, it is better to have a standard capable of doing much good rather than no standard at all.

They have further borne in mind that the interests of one of our largest industries should be considered and that the manufacturers should not be called upon to maintain ventilating plant at enormous expense, unless it can be clearly shown that this is necessary for the well-being of the workers.

In certain branches of the textile trade alone has a standard of ventilation been fixed, and it is perfectly well known that throughout the country in indoor occupations, especially in winter, the standard now proposed is often enormously exceeded.

TABLE XLVIII.—DEATHS OF MALE AND FEMALE WEAVERS FOR THE YEARS 1899—1908.

Age Periods.	1899		1900		1901		1902		1903		1904		1905		1906		1907		1908		Total.	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
15 to 25	32	17	7	23	12	23	8	21	7	20	8	16	8	14	10	26	7	16	11	17	110	193
25 to 35	11	20	10	23	7	25	12	10	9	18	2	12	9	19	6	15	9	11	2	10	77	163
35 to 45	28	11	9	16	12	14	11	15	8	11	6	13	10	17	5	16	13	7	13	10	115	130
45 to 55	24	4	15	4	7	6	13	10	14	6	14	11	9	7	11	12	16	11	16	9	139	80
55 to 65	16	5	15	10	17	5	16	7	14	4	25	4	14	7	10	10	13	5	15	1	155	58
65 and upwards.	47	4	34	6	27	6	22	8	21	6	19	5	30	7	34	4	26	8	26	9	286	63

TABLE XLIX.—DEATH RATES OF MALE AND FEMALE WEAVERS FOR THE YEARS 1899--1908.

Age Periods.	1899		1900		1901		1902		1903		1904		1905		1906		1907		1908		Average Rate for 10 years.	
	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F	M	F
15 to 25...	11.1	2.3	2.4	3.1	4.1	3.1	2.7	2.8	2.4	2.7	2.7	2.1	2.7	1.9	3.4	3.5	2.4	2.1	3.7	2.3	3.7	2.5
25 to 35...	6.0	4.6	5.5	5.3	3.8	5.7	6.5	2.2	4.9	4.1	1.0	2.7	4.9	4.2	3.2	3.4	4.9	2.5	1.0	2.2	4.1	3.7
35 to 45...	22.3	5.2	7.1	7.5	9.3	6.6	8.6	7.0	6.3	5.1	4.7	6.1	7.3	7.9	3.9	7.5	10.2	3.2	10.2	4.6	8.9	6.0
45 to 55...	34.3	5.6	21.4	5.6	10.0	8.4	18.3	14.2	19.7	8.4	19.7	15.4	12.7	9.8	15.5	16.9	22.6	15.5	22.6	12.6	19.6	11.2
55 to 65...	36.9	23.0	34.6	46.0	39.2	23.0	36.8	31.9	32.2	18.2	57.6	18.2	32.2	31.9	23.0	45.6	29.9	22.8	34.5	4.5	35.6	26.5
65 & upds.	255.4	40.0	184.7	60.0	146.7	60.0	119.5	80.0	114.1	60.0	103.2	50.0	163.1	70.0	184.7	40.0	141.3	80.0	141.3	90.0	155.4	63.0

The following rates have been worked from the 1901 Census figures, including the retired operatives and those operatives who came in with the extension of the Borough in 1901.

TABLE L.—DEATHS DURING 1908.

Age Periods.	Weavers	Spinners.	Warpers, Winders, &c.	Card Room Hands	Borough.
15 to 25	28	4	3	1	93
25 to 35.....	12	1	5	3	114
35 to 45.....	23	6	3	1	143
45 to 55	25	10	6	7	230
55 to 65.....	16	9	7	6	317
65 and upwards ...	35	10	2	4	474
Total	139	40	26	22	1371

TABLE LI.—DEATH RATES for 1908.

Age Periods.	Weavers.	Spinners.	Warpers, Winders, &c.	Card Room Hands	Borough.
15 to 25.....	2.7	6.1	1.2	1.5	3.4
25 to 35.....	1.9	2.4	2.9	6.9	5.3
35 to 45.....	6.7	11.4	2.7	2.2	8.2
45 to 55	17.6	29.4	10.0	33.4	19.3
55 to 65.....	24.5	61.6	33.1	78.9	44.0
65 and upwards ...	123.2	119.0	21.5	95.2	112.1
All Ages over 15 Years.....	6.2	18.4	4.2	11.8	15.4

TABLE LII.—PHTHISIS, 1908.
DEATHS.

Age Periods.	Weavers.	Spinners.	Winders, Warpers, &c.	Card Room Hands	Borough.
15 to 25.....	9	2	2	1	24
25 to 35.....	3	...	3	1	37
35 to 45.....	8	...	...	...	32
45 to 55.....	4	2	...	1	27
55 to 65.....	2	1	...	...	17
65 and upwards.....	...	...	...	...	1
Total.....	26	5	5	3	138

TABLE LIII.—DEATH RATES FOR 1908.

Age Periods.	Weavers.	Spinners.	Winders, Warpers, &c.	Card Room Hands	Borough.
15 to 25.....	0·8	3·0	0·8	1·5	0·8
25 to 35.....	0·4	0·0	1·7	2·3	1·7
35 to 45.....	2·3	0·0	0·0	0·0	1·8
45 to 55.....	2·8	5·8	0·0	4·7	2·2
55 to 65.....	3·0	6·8	0·0	0·0	2·3
65 and upwards.....	0·0	0·0	0·0	0·0	0·2
All Ages over 15 years...	1·1	2·3	0·8	1·6	1·5

TABLE LIV.—RESPIRATORY DISEASES OTHER
THAN PHTHISIS, 1908.

DEATHS.

Age Periods.	Weavers.	Spinners.	Winders, Warpers, etc.	Card Room Hands.	Borough.
15 to 25	1	1	...	..	13
25 to 35	2	...	...	...	15
35 to 45	1	1	...	...	25
45 to 55	6	...	...	2	41
55 to 65	6	1	3	1	77
65 and upwards.....	11	1	2	2	101
Total	27	4	5	5	272

TABLE LV.—DEATH RATES for 1908.

Age Periods.	Weavers.	Spinners.	Winders, Warpers, etc.	Card Room Hands.	Borough.
15 to 25	0.09	1.5	0.0	0.0	0.4
25 to 35	0.3	0.0	0.0	0.0	0.6
35 to 45	0.2	1.9	0.0	0.0	1.4
45 to 55	4.2	0.0	0.0	9.5	3.4
55 to 65	9.1	6.8	14.2	13.1	10.6
65 and upwards	38.7	11.9	21.5	47.6	23.8
All ages over 15 years ...	1.2	1.8	0.8	2.6	3.0

TABLE LVI.—DEATHS from all causes from
1889 to 1908.

Age Periods.	Weavers.	Spinners.	Winders, Warper, &c.	Card Room Hands	Borough.
15 to 25.....	728	74	194	44	2195
25 to 35	523	88	200	52	2632
35 to 45.....	524	107	168	68	3776
45 to 55	403	149	159	74	4632
55 to 65.....	453	130	118	44	5884
65 & upwards.....	581	228	154	38	8446
Total	3212	776	993	320	27565

TABLE LVII.—AVERAGE DEATH RATES 1889 to 1908.

Age Periods.	Weavers.	Spinners	Winders, Warper, &c.	Card Room Hands	Borough
15 to 25.....	3'5	5'6	3'9	3'4	4'1
25 to 35	4'2	10'5	5'9	6'0	6'1
35 to 45.....	7'7	10'2	7'7	7'6	10'9
45 to 55.....	14'2	21'9	13'3	17'7	19'4
55 to 65	34'6	44'5	27'9	28'9	40'8
65 & upwards.....	102'2	135'7	82'8	45'2	99'8
All Ages over 15 Years	7'2	17'9	8'1	8'6	15'5

TABLE LVIII.—PHTHISIS, 1889—1908.
DEATHS.

Age Periods.	Weavers.	Spinners	Winders, Warpers, &c.	Card Room Hands	Borough.
15 to 25.....	213	19	60	13	575
25 to 35.....	158	26	74	21	615
35 to 45.....	119	26	26	17	700
45 to 55.....	47	17	11	11	416
55 to 65.....	30	4	4	1	201
65 and upwards	3	2	3	0	42
Total	570	94	178	63	2549

TABLE LIX.—AVERAGE DEATH RATES,
1889 TO 1908.

Age Periods.	Weavers.	Spinners.	Winders, Warpers, &c.	Card Room Hands	Borough.
15 to 25	1'0	1'4	1'2	1'0	1'0
25 to 35.....	1'2	3'1	2'1	2'4	1'4
35 to 45.....	1'7	2'4	1'2	1'9	2'0
45 to 55... ..	1'6	2'5	0'9	2'6	1'7
55 to 65	2'2	1'3	0'9	0'6	1'4
65 and upwards.....	0'5	1'1	1'6	0'0	0'5
All Ages over 15 years	1'2	2'1	1'4	1'7	1'4

TABLE LX.—RESPIRATORY DISEASES OTHER
THAN PHTHISIS, 1889-1908.
DEATHS.

Age Periods.	Weavers	Spinners	Winders, Warper, etc.	Card Room Hands.	Borough
15 to 25.....	72	12	27	4	337
25 to 35.....	70	20	17	5	442
35 to 45.....	95	20	39	12	805
45 to 55	126	41	39	29	1248
55 to 65.....	154	51	33	11	1800
65 and upwards.....	145	59	40	15	2263
Total.....	662	203	195	76	6894

TABLE LXI.—AVERAGE DEATH RATES
1889—1908.

Age Periods.	Weavers	Spinners	Winders, Warper, etc.	Card Room Hands.	Borough
15 to 25.....	0·3	0·9	0·5	0·3	0·6
25 to 35.....	0·5	2·4	0·5	0·5	1·0
35 to 45.....	1·4	1·9	1·8	1·3	2·3
45 to 55.....	4·4	6·0	3·2	6·9	5·2
55 to 65.....	11·7	17·4	7·8	7·2	12·5
65 and upwards.....	25·5	35·1	21·5	17·8	26·7
All ages over 15 years ...	1·4	4·6	1·6	2·0	3·8

FEVER HOSPITAL.

The Fever Hospital is situated in Longshaw Lane, on an open site of $10\frac{1}{2}$ acres, and at a height of 560 feet above sea-level.

Full particulars appeared in my Annual Report for 1903, respecting cost, number of beds, buildings, etc.

The following Table gives an analysis of the number of cases admitted to the Fever Hospital during 1908, the number of deaths, and other details.

It will be observed that the average number of beds occupied was 66.5, which is 11.8 greater than during 1907.

The average number of days occupied in the Hospital by the patients was 44.9, which is 5.1 greater than for 1907.

There was a slightly greater case mortality from Scarlet Fever, and a much less case mortality from Enteric Fever during 1908, as compared with 1907.

The Hospital still maintains its reputation as a life-saving institution, and is much appreciated by the public. Many cases are treated and nursed there who could not receive the same attention at their own homes.

During the year a large hen-run has been erected in the Hospital grounds.

The usual repairs have been carried out where necessary, and a considerable amount of painting has been carried out at the administrative block.

Also a new steam disinfecter (Manlove and Alliott's) has been provided at the Hospital.

Another new steam disinfecter of the same type has been provided near the Throstle-street Destructor. This is a great saving of time and trouble.

I have again followed the plan initiated in my Annual Report for 1903, of giving a fuller description than had been included previously of the cases treated in the Fever Hospital, dealing with each disease separately. Dr. Linton has assisted me in analysing the Register for this purpose.

TABLE LXII.—FEVER HOSPITAL.

Disease.	Patients remaining in hospital on January 1st, 1908.			Patients admitted and discharged in 1908.			Patients remaining in hospital on January 1st, 1909.			Analysis of cases admitted in 1908, including those admitted in 1908 and discharged in 1909.					Average No. of beds occupied during 1908.	Cases removed expressed as a percentage of total notified.
	Total	Recov-ered.	Died.	Total	Recov-ered.	Died.	Total	Recov-ered.	Died.	Total	Recov-ered.	Died.	Case-Mortality in Hospital	Average days in Hospital		
Scarlet Fever	37	37	0	363	346	17	71	70	1	434	416	18	4.1	45.7	54.2	72.6 per cent
Enteric Fever....	3	3	0	40	34	6	14	14	0	54	48	6	11.1	44.5	6.6	72.9
Diphtheria	4	4	0	32	32	0	7	7	0	39	39	0	0.0	43.4	4.6	42.0
Other Diseases	2	2	0	17	13	4	1	1	0	18	14	4	22.2	23.9	1.2	„
Totals	46	46	0	452	425	27	93	92	1	545	517	28	5.1	41.9	66.5	68.7

This Table includes 9 cases admitted from outside the Borough during 1908, and the percentages are worked out on the total number of admissions into Hospital.

SCARLET FEVER.

The total number of cases admitted during the year as Scarlet Fever was 437. Of these 6 were negative, leaving 431. In addition 3 cases sent in as Diphtheria were found on admission to be suffering from Scarlet Fever and not Diphtheria. The total number of cases of Scarlet Fever admitted during the year was therefore 434. Two of these were from districts outside the Borough.

The following complications and sequelæ occurred among the Scarlet Fever patients :—

Complications.	No. of Cases.
Otorrhœa	89
Rhinorrhœa	79
Cervical adenitis—	
Non-suppurative	42
Suppurative	12
Albuminuria	38
Nephritis	23
Joint pains	13
Convalescent tonsillitis	5
Broncho-pneumonia	4
Bronchitis	3
Facial paralysis from otitis media	2
Marasmus	2
Abscess of Mastoid	1
Pyæmia	1

No cases of relapse occurred. Of the six negative cases two were acute infective gastro enteritis, one was catarrhal tonsillitis, one was erythema with purulent conjunctivitis, one was pneumonia, and one had pyrexia of uncertain origin.

One patient developed cellulitis of the neck which caused urgent dyspnœa. Tracheotomy was performed, but the patient died some hours later.

CHICKEN-POX AMONGST SCARLET FEVER PATIENTS.

Two outbreaks occurred.

In the first there were 11 cases :—

(1) No. 33. Male, 2 years. Admitted January 23rd. Had Chicken-pox on admission. Was kept in the receiving-ward until February 17th, when he was admitted to the main ward.

(2) No. 19. Male, 5 years. Admitted January 15th. Sources of infection uncertain. It may have been carried from case (1). Developed Chicken-pox on February 23rd.

(3) No. 58. Male, 5 years. Admitted February 14th. Developed Chicken-pox February 28th. Probably infected before admission.

(4) No. 83. Female, 6 years. Admitted March 2nd. Chicken-pox March 3rd. Infected before admission.

(5) No. 29. Female, 5 years. Admitted January 20th. Chicken-pox March 9th. Infected by case (2). Incubation period 15 days.

(6) No. 45. Female, 3 years. Admitted February 5th. Chicken-pox March 12th. Infected by case (3). Incubation period 13 days.

(7) No. 63. Male, 3 years. Admitted February 19th. Chicken-pox March 15th. Infected by case (3). Incubation period 16 days.

(8) No. 66. Female, 5 years. Admitted February 21st. Chicken-pox March 21st. Infected by case (4) or case (5). Incubation period 18 or 12 days.

(9) No. 39. Female, 15 years. Admitted February 1st. Chicken-pox March 23rd. Infected by case (5). Incubation period 14 days.

(10) No. 50. Male, 2 years. Admitted February 7th. Chicken-pox March 27th. Infected by case (5), (6) or (7). Incubation period 18, 15, or 12 days.

(11) No. 71. Female, 2 years. Admitted February 26th. Chicken-pox March 31st. Infected by case (6) or case (7). Incubation period 19 or 16 days.

In the second outbreak 13 cases have occurred up to the 18th of February, 1909.

(1) No. 431. Male, 4 years. Admitted November 11th. Chicken-pox November 15th. Infected before admission.

(2) No. 416. Male, 1 year. Admitted November 2nd. Chicken-pox November 29th. Infected by case (1). Incubation period 14 days.

(3) No. 417. Male, 3 years. Admitted November 2nd. Chicken-pox December 15th. Infected by case (2). Incubation period 16 days.

(4) No. 387. Female, 3 years. Admitted October 19th. Chicken-pox December 23rd. Source of infection and incubation period uncertain.

(5) No. 490. Female, 5 years. Admitted December 8th. Chicken-pox January 3rd. Infected by case (3). Incubation period 18 days.

(6) No. 391. Male, 4 years. Admitted October 21st. Chicken-pox January 4th. Infected by case (3). Incubation period 19 days.

(7) No. 487. Female, 17 years. Admitted December 7th. Chicken-pox January 4th. Infected by case (3). Incubation period 19 days.

(8) No. 514. Male, 3 years. Admitted December 18th. Chicken-pox January 16th. Infected by case (5) or case (6). Incubation period 13 or 12 days.

(9) No. 522. Male, 3 years. Admitted December 21st. Chicken-pox January 17th. Infected by case (5) or case (6). Incubation period 14 or 13 days.

(10) No. 466. Male, 1 year. Admitted December 1st. Chicken-pox January 22nd. Infected by case (5) or case (6). Incubation period 19 or 18 days.

(11) No. 515. Female, 3 years. Admitted December 18th. Chicken-pox February 1st. Infected by case (8). Incubation period uncertain, as she was exposed to infection from January 16th onwards.

(12) No. 533. Male, 3 years. Admitted December 26th. Chicken-pox February 1st. Source of infection and incubation period uncertain. Infection was carried probably by third person.

(13) No. 51 (1909). Female, 5 years. Admitted January 20th. Chicken-pox February 18th. Infected by case (12). Incubation period 17 days.

MEASLES AMONGST SCARLET FEVER PATIENTS.

There was one outbreak. Six cases occurred, all being mild.

(1) No. 476. Male, 2 years. Admitted December 3rd. Rash, December 25th. Source of infection unknown.

(2) No. 415. Female, 3 years. Admitted November 2nd. Rash, January 4th.

(3) No. 391. Male, 4 years. Admitted October 31st. Rash, January 6th.

(4) No. 466. Male, 1 year. Admitted December 1st. Rash, January 15th.

(5) No. 465. Male, 5 years. Admitted November 28th. Rash, January 22nd.

(6) No. 514. Male, 3 years. Admitted December 18th. Rash. January 27th.

POST SCARLATINAL DIPHThERIA.

No Scarlet Fever patients became infected with Diphtheria during the year.

CASES OF SCARLET FEVER AND DIPHThERIA OCCURRING CONCURRENTLY BUT CERTIFIED AS DIPHThERIA.

(1) No. 281. Male, 3 years. Admitted August 2nd. A culture from the throat taken on admission was positive. August 15th he developed suppurative cervical adenitis, and later was found to be desquamating.

(2) No. 525. Male, 5 years. Admitted December 22nd. A culture taken from the throat on admission proved to be positive. On January 13th he developed cervical adenitis and nephritis, and subsequently desquamated.

RETURN CASES OF SCARLET FEVER.

“Return cases” is a term employed to indicate the re-appearance of Scarlet Fever infection in a household within one month after the return home of a Scarlet Fever patient from the Hospital.

Thirty-seven Return Cases occurred during 1908.

The periods between the return home of the first case and the occurrence of the second case were :—

Period.	No. of Cases.
3 days	1
5 „	4
6 „	2
7 „	1
8 „	1
9 „	5

Period.	No. of Cases.
10 days	6
13 „	5
14 „	1
15 „	1
16 „	1
18 „	1
19 „	1
20 „	2
21 „	1
22 „	2
23 „	1
28 „	1

Fuller details of the circumstances under which infection of each return case occurred are given in the following table :—

TABLE LXIII.—RETURN CASES OF SCARLET FEVER (Hospital Treated).

INFECTING CASE.						INFECTED CASE.							
Case No.	No. in Register	Description.	Date of Ad- mission.	Date of Dis- charge.	Days in Hos- pital	Complications.	Case No.	No. in Register	Description.	Date of Onset.	Date of Ad- mission.	Days Interval	
1	443	female, 12 years	Nov. 15	Dec. 24	39	none	{	1	13	male, 5 years	Jan. 3	Jan. 7	10
2	417	female, 8 years	Nov. 4	Dec. 13	39	none		2	14	female, 3 years	Jan. 3	Jan. 7	10
3	466	male, 5 years	Nov. 28	Dec. 31	33	none	{	3	10	female, 5 years	Jan. 5	Jan. 7	23
4	81	male, 1 year	Feb. 28	Apl. 7	40	none		4	9	male, 21 years	Jan. 5	Jan. 7	5
5	33	male, 2 years	Jan. 23	Apl. 16	85	Otorrhoea, Rhi- norrhoea, Cervi- cal Adenitis	{	5	135	female, 5 years	Apl. 16	Apl. 21	9
6	131	male, 3 years	Apl. 18	May 22	35	Rhinorrhoea		6	136	female, 4 years	Apl. 17	Apl. 21	10
7	141	female, 13 years	Apl. 24	June 5	43	none	{	7	134	female, 26 years	Apl. 20	Apl. 21	13
8	124	male, 6 years	Apl. 15	June 26	73	Otorrhoea		8	140	female, 5 years	Apl. 21	Apl. 24	5
							9	197	male, 18 years	June 13	June 15	22	
							10	202	male, 3 years	June 18	June 19	13	
							11	234	female, 3 years	July 6	July 7	10	

TABLE LXIII.—RETURN CASES OF SCARLET FEVER (Hospital Treated). continued.

INFECTING CASE.						INFECTED CASE.						
Case No.	No. in Register	Description.	Date of Ad- mission.	Date of Dis- charge.	Days in Hos- pital.	Complications.	Case No.	No. in Register	Description.	Date of Onset.	Date of Ad- mission.	Days Interval
9	156	male, 5 years	May 18	July 7	51	none	{ 12 13	244 248	male, 7 years female, 1 year	July 13 July 13	July 14 July 18	6 6
10	151	male, 4 years	May 6	June 30	56	Cervical Adenitis Nephritis	14	243	female, 9 years	July 13	July 13	13
11	172	female, 7 years	June 1	July 14	44	Otorrhœa Enlarged tonsils	15	257	female, 3 years	July 23	July 23	9
12	205	female, 6 years	June 22	July 28	37	none	16	283	male, 3 years	July 31	Aug. 4	3
13	190	female, 22 years	June 12	July 14	33	none	17	...	male, 6 years	Aug. 1	...	18
14	163	male, 4 years	May 26	July 28	64	Otorrhœa	18	289	male, 4 years	Aug. 6	Aug. 7	9
15	175	male, 10 years	June 3	July 14	42	none	19	296	female, 3 years	Aug. 11	Aug. 12	28
16	206	male, 10 years	June 23	Aug. 7	46	none	20	313	male, 6 years	Aug. 20	Aug. 21	13

TABLE LXIII.—RETURN CASES OF SCARLET FEVER (Hospital Treated)—continued.

INFECTING CASE.							INFECTED CASE.					
Case No.	No. in Register	Description.	Date of Admission.	Date of Discharge.	Days in Hospital.	Complications.	Case No.	No. in Register	Description.	Date of Onset.	Date of Admission.	Days Interval
17	246	male, 7 years	July 17	Aug. 25	40	none	21	324	female, 3 years	Aug. 30	Sept. 2	5
18	241	male, 12 years	July 13	Aug. 25	44	Otorrhœa	22	326	male, 15 years	Sept. 3	Sept. 5	9
19	192	female, 4 years	June 12	Aug. 21	71	Rhinorrhœa Excoriated Nostrils	23	327	male, 12 years	Sept. 6	Sept. 7	16
20	234	female, 3 years	July 7	Sept. 4	60	none	24	...	female, 1 year	Sept. 13	...	9
21	250	male, 4 years	July 18	Aug. 25	39	none	25	342	male, 7 years	Sept. 15	Sept. 16	21
22	255	male, 4 years	July 22	Sept. 8	49	none	{ 26	361	female, 11 years	Sept. 28	Oct. 1	20
						27		362	female, 6 years	Sept. 30	Oct. 1	22
23	273	female, 6 years	July 27	Sept. 15	51	none	28	360	female, 4 years	Sept. 29	Sept. 30	14
24	271	female, 2 years	July 27	Sept. 1	37	none	29	369	male, 4 years	Sept. 20	Oct. 6	19

TABLE XLIII. RETURN CASES OF SCARLET FEVER (Hospital Treated)—continued.

INFECTING CASE.							INFECTED CASE.					
Case No.	No. in Register	Description.	Date of Ad- mission.	Date of Dis- charge.	Days in Hos- pital.	Complications.	Case No.	No. in Register	Description.	Date of Onset.	Date of Ad- mission.	Days Interval
25	314	male, 5 years	Aug. 21	Oct. 2	43	none	30	378	female, 8 years	Oct. 12	Oct. 13	10
26	365	female, 6 years	Oct. 3	Nov. 17	46	none	{ 31	462	male, 11 years	Nov. 27	Nov. 28	10
27	337	female, 3 years	Sept. 15	Nov. 27	74	Otorrhœa, Rhi- norrhœa, Ex- coriated Nostrils	32	471	male, 13 years	Nov. 30	Dec. 2	13
28	390	male, 9 years	Oct. 21	Nov. 27	38	Cervical Adenitis Enlarged Tonsil	{ 33	472	male, 16 years	Dec. 1	Dec. 2	15
29	432	male, 4 years	Nov. 12	Dec. 15	34	none	34	476	male, 2 years	Dec. 2	Dec. 3	5
30	399	male, 5 years	Oct. 26	Dec. 4	40	Otorrhœa	35	486	male, 5 years	Dec. 5	Dec. 7	8
							36	531	female, 1 year	Dec. 22	Dec. 24	7
							37	536	female, 7 years	Dec. 24	Dec. 28	20

REMARKS ON THE ABOVE RETURN CASES OF SCARLET FEVER.

Case 1.—The patient had a sore mouth after being discharged.

Case 2.—The infecting and infected patients slept in the same bed from December 24th to January 5th.

Case 3.—Had enlarged cervical glands and some soreness of the nose after being discharged.

Case 4.—Patient remained perfectly well after discharge.

Case 5.—Patient suffered from enlarged glands in the neck and discharge from the nose after returning home.

Case 6.—Patient was discharged May 21st, but did not return home until May 28th, and the onset in the infected patient was 16 days later. The patient has had nasal discharge since leaving hospital.

Case 7.—Patient remained quite well after return home.

Case 8.—Patient's clothes were not disinfected, only fumigated. Patient remained quite well after discharge.

Case 9.—Patient's clothes were only fumigated. Patient remained quite well after leaving hospital.

Case 10.—Patient's clothes were only fumigated. Patient remained quite well after discharge.

Case 11.—Patient's clothes only fumigated. Patient was quite well after return home.

Case 12.—Patient's clothes only fumigated. Patient remained quite well after return home.

Case 13.—Patient's clothes only fumigated. Patient remained quite well after return home.

Case 14.—Patient's clothes only fumigated. Patient remained quite well after return home.

Case 15.—Patient's clothes only fumigated. Patient remained quite well after return home.

Case 16.—Patient remained quite well after discharge.

Case 17.—Patient remained quite well after return home.

Case 18.—Patient had a sore nose after returning home, and slept in the same bed as the infected patient.

Case 19.—Patient remained quite well after return home.

Case 20.—Patient remained quite well after return home.

Case 21.—On August 27th and 28th patient had otorrhœa and nasal discharge.

Case 22.—Patient remained quite well after discharge.

Case 23.—Patient remained quite well after return home.

Case 24.—Patient had no discharge nor sores after return home.

Case 25.—Patient remained quite well after return home.

Case 26.—Patient had a sore nose with nasal discharge on November 24th, and following days. Nos. 471 and 472 were infected by No. 462.

Case 27.—Patient had nasal discharge when sent out from hospital, and after return home played with and nursed the infected patient.

Case 28.—Patient had one much-enlarged tonsil. He remained quite well after returning home.

Case 29.—Patient's throat and nostrils were somewhat red at time of discharge.

Case 30.—Patient remained quite well after return home.

Every care was taken before any patient left the Hospital to prevent the carriage of infection.

11. *Secondary cases occurring in a house from which the first case was removed to Hospital, but which occurred before discharge from Hospital.*

There were 31 of these during 1908.

The periods between the onset of the first case and onset of the second were :—

Period.	No. of Cases.
1 day	5
2 days	5
3 „	5
5 „	1
6 „	2
7 „	1
10 „	2
11 „	2
12 „	1
13 „	3
23 „	1
25 „	1
39 „	2

Table LXIV.—Secondary Cases of Scarlet Fever occurring while the first case was in Hospital.

INFECTING CASE.				INFECTED CASE.				Interval in days.
Case Number.	Description.	Date of Onset	Date of Admission.	Case Number.	Description.	Date of Onset.	Date of Admission.	
1	E.H., female, 14 years	Dec. 26th	Dec. 27th	1	C.A.H., female, 40 years	Jan. 7th	Jan. 7th	11
2	R.G.K., male, 12 years	Dec. 30th	Jan. 2nd	2	A.E.K., female, 13 years	Jan. 12th	Jan. 13th	10
3	F.G., male, 5 years	Dec. 31st	Jan. 3rd	3	E.M.E., female, 1 year	Jan. 28th	.....	25
4	W.W.S., male, 8 years	Feb. 3rd	Feb. 4th	4	H.S., male, 2 years	Feb. 6th	Feb. 7th	2
5	A.S., male, 4 years	Jan. 21st	Feb. 7th	5	E.S., male, 7 years	Feb. 13th	Feb. 13th	23
6	I.B., female, 12 years	March 19th	March 20th	6	E.B., female, 10 years	April 1st	April 3rd	13
7	M.H., female, 9 years	March 18th	March 21st	7	A.H., female, 2 years	March 21st	March 23rd	3
8	J.W.C., male, 5 years	March 19th	March 19th	8	A.H., male, 14 years	March 22nd	March 24th	3
9	M.S., female, 6 years	April 15th	April 16th	9	A.S., female, 8 years	April 18th	April 21st	2
10	M.L., female, 2 years	March 17th	March 18th	10 {	E.L., female, 6 years	April 26th	.....	39
				11	W.L., male, 1 year	April 26th	.....	39
11	B.G., female, 2 years	April 15th	April 18th	12	C.G., male, 4 years	May 1st	May 4th	13

Table LXIV. —Secondary Cases of Scarlet Fever occurring while the first case was in Hospital (continued).

INFECTING CASE.				INFECTED CASE.				Interval in days.
Case Number.	Description.	Date of Onset.	Date of Admission.	Case Number.	Description.	Date of Onset.	Date of Admission.	
12	E.P.T., female, 8 months	May 3rd	May 4th	13	C.G.T., male, 3 years	May 5th	May 5th	1
13	A.W., female, 6 years	May 30th	May 31st	14	W.L.W., female, 11 yrs	June 3rd	June 4th	3
14	H.C., male, 11 years	June 1st	June 2nd	15	W.C., female, 2 years	June 5th	...	3
15	M.M., female, 7 years	June 8th	June 8th	16	J.E.M., male, 1 year	June 19th	June 20th	11
16	H.W., male, 3 years	June 14th	June 14th	17	J.W., female, 5 years	June 21st	June 22nd	2 3 2
17	T.C., male, 13 years	June 29th	June 30th	18	E.C., male, 10 years	July 2nd	July 3rd	2
18	E.W., male, 12 years	July 6th	July 7th	19	E.W., male, 10 years	July 8th	July 9th	1
19	G.M.W., female, 9 years	July 10th	July 11th	20	J.S.W., male, 1 year	July 12th	...	1
20	W.F., male, 7 years	July 19th	July 20th	21	W.F., female, 6 years	July 22nd	July 22nd	2
21	M.W., female, 12 years	Aug. 2nd	Aug. 4th	22	E.W., female, 9 years	Aug. 7th	Aug. 8th	3
22	B.T., female, 15 years	Aug. 16th	Aug. 18th	23	W.T., male, 13 years	Aug. 23rd	Aug. 26th	5
23	A.C., female, 6 years	Aug. 15th	Aug. 17th	24	F.C., male, 1 year	Aug. 27th	Aug. 27th	10

Table LXIV.—Secondary Cases of Scarlet Fever occurring while the first case was in Hospital (continued).

INFECTING CASE.				INFECTED CASE.				Interval in days.
Case Number.	Description	Date of Onset.	Date of Admission.	Case Number.	Description.	Date of Onset.	Date of Admission.	
24	H.S., female, 7 years	Oct. 1st	Oct. 2nd	25	A.S., female, 2 years	Oct. 3rd	Oct. 6th	1
25	W.E., male, 10 years	Nov. 14th	Nov. 16th	26	L.A. female, 4 years	Nov. 22nd	Nov. 23rd	6
26	L.A., female, 4 years	Nov. 22nd	Nov. 23rd	27	R.A., male, 6 years	Nov. 24th	Nov. 24th	1
27	A.F.H., male, 4 years	Nov. 9th	Nov. 11th	28	M.H., female, 1 year	Nov. 24th	Nov. 25th	13
28	S.T., female, 11 years	Nov. 26th	Dec. 1st	29	H.T., male, 12 years	Dec. 3rd	Dec. 4th	2
29	M.H., female, 1 year	Nov. 24th	Nov. 25th	30	F.H., male, 10 years	Dec. 7th	Dec. 8th	12
30	J.L., male, 7 years	Dec. 1st	Dec. 7th	31	M.L., female, 8 years	Dec. 13th	Dec. 15th	6

III.—*Secondary Cases of Scarlet Fever occurring in a house in which the first case was nursed at home.*

Twenty-one of these cases occurred during the year.

The periods respectively between the onset of the first case and the onset of the second case were :—

Period.	No. of Cases.
2 days	1
3 „	1
4 „	3
5 „	1
6 „	1
10 „	1
13 „	2
14 „	1
19 „	1
20 „	2
21 „	2
26 „	1
30 „	1
38 „	1
42 „	1
196 „	1

TABLE LXV.

Monthly Admissions of Scarlet Fever Cases to Fever
Hospital during 1908.

Month.	Total Number of Scarlet Fever Cases Notified.	Scarlet Fever Removals.	Percentages of Removals of S. F.
January.....	37	23	62·1
February	43	32	74·4
March	30	22	73·3
April	40	21	52·5
May	38	21	55·2
June	58	48	82·7
July	65	52	80·0
August	44	34	77·2
September	37	31	83·7
October	58	43	75·0
November..	55	44	80·0
December.....	90	61	67·7
Totals.....	595	432	72·6

TABLE LXVI.

The following table shows the percentage of Scarlet Fever removals in wards during 1908.

Wards.	Percentages.
St. Stephen's	70·5
Trinity	69 0
St. Michael's	80·7
St. John's... ..	75·6
St. Silas's.....	38·8
St. Paul's.....	57 9
St. Peter's	92 8
St. Mary's	100·0
St. Matthew's	81·2
St. Thomas's	85·7
Park	72 7
St. Luke's	81·0
St Mark's	70·4
St Andrew's	68 7

ENTERIC FEVER.

The total number of cases admitted to the Hospital certified as Enteric Fever was 64. Ten of these were not Enteric, leaving 54 cases.

The negative cases were—

Diarrhœa (? Food Poisoning)	4
Influenza	1
Pneumonia	1
Abscess of Liver	1
Acute infective angiocholitis	1
Catarrhal bronchitis	1
Septic endometritis after a miscarriage ...	1

One of these negative cases (abscess of the liver) died.

The following complications and sequelæ occurred :—

Broncho-pneumonia	in 10 cases.
One relapse	8 ..
Bronchitis	6 ..
Hæmorrhage from bowel	5 ..
Pleurisy	3 ..
Abscesses (1 or more)	3 ..
Cardiac dilatation	3 ..
Pneumonia	2 ..
Thrombosis left femoral vein... ..	2 ..
Pleuritic effusion	1 ..
Otorrhœa	1 ..

TABLE LXVII.

The following table shows the percentage of Enteric Fever removals in Wards during 1908.

Ward.	Percentages.
St. Stephen's	5'0
Trinity	75'0
St. Michael's	66'6
St John's	66'6
St. Silas's	50'0
St. Paul's	66'6
St. Peter's	100 0
St Mary's	66'6
St Matthew's	80 0
St. Thomas's	50 0
Park	85 7
St. Luke's	100'0
St Mark's	100 0
St. Andrew's	71'4

TABLE LXVIII.

Showing cases of Scarlet Fever and Typhoid Fever removed to Hospital expressed at a percentage of the cases notified :—

Year.	Scarlet Fever.	Enteric Fever.
1895	56.0	45.4
1896	63.0	53.8
1897	61.0	51.4
1898	50.0	43.0
1899	47.0	54.0
1900	26.0	43.5
1901	26.7	59.5
1902	56.4	62.2
1903	69.0	60.8
1904	72.2	70.2
1905	71.6	62.2
1906	73.3	73.1
1907	70.9	57.3
1908	72.6	72.9

DIPHTHERIA.

Forty-four cases were admitted to the Hospital certified as Diphtheria. Five of these had not Diphtheria, but had the following diseases :—

Scarlet Fever	3
Tonsillitis	1
Specific disease	1

Among the 39 cases of Diphtheria no deaths occurred.

Tracheotomy was required in two cases of laryngeal diphtheria.

(1) No. 412. Female, 4 years. Admitted October 31st, on the eighth day of disease, with faucial and laryngeal diphtheria. Tracheotomy was performed on admission.

(2) No. 530. Female, 2 years. Admitted December 24th, on the second day of disease, with faucial and laryngeal diphtheria. Tracheotomy was performed on admission.

Both these cases recovered.

The following complications and sequelæ occurred amongst the Diphtheria patients :—

Albuminuria	in 17 cases.
Antitoxin rash	„ 16 „
Paralysis—	
Eye muscles	„ 3 „
Pharynx	„ 1 „
Palate	„ 8 „
Dilated heart	„ 4 „
Irregular pulse without dilata- tion	„ 4 „
Rhinorrhœa	„ 3 „
Diphtheritic vaginitis	„ 1 „

There was no outbreak of any other infectious disease amongst the diphtheria patients during 1908.

There was one return case of Diphtheria during 1908.

Infecting patient.—No. 404. Male, 2 years. Admitted October 27th. Had slight nasal discharge on November 15th and following days. When he was sent out he had no nasal discharge, and cultures from his throat and nose were negative. Date of discharge, December 1st.

Infected patient.—No. 501. Male, 15 years. Admitted December 14th. Date of onset, December 12th, 11 days after return home of first case.

The infecting patient remained quite well after his return home.

TABLE LXIX.

The following Table shows the percentage of Diphtheria removals in Wards during 1908.

Wards	Percentages
St Stephen's.....	28·5
Trinity	100·0
St. Michael's	75·0
St. John's	42·8
St. Silas's	16·6
St. Paul's	50·0
St. Peter's	75·0
St. Mary's	100·0
St. Matthew's	80·0
St. Thomas's	66·6
Park	50·0
St. Luke's	100·0
St. Mark's	14·3
St. Andrew's	16·6

TABLE LXX.—Deaths in the Hospital during 1908.

No.	Date.	Name.	Age.	No. of Days in Hospital	Cause of Death.
1	Jan. 23	A.E.K.	14 years	10	Scarlet Fever.
2	Feb. 10	J.D.	12 „	7	Enteric Fever.
3	„ 19	A.W.	2 „	6	Scarlet Fever.
4	„ 28	S.A.M.	23 „	3	Enteric Fever.
5	Apl. 8	E.A.A.	2 „	1	Scarlet Fever.
6	„ 13	C.T.	2 „	7	Scarlet Fever.
7	May 13	E.P.T.	8 mths.	10	Scarlet Fever.
8	June 5	S.G.	2 years	5	Scarlet Fever.
9	„ 29	H.L.	3 „	1	Scarlet Fever.
10	July 3	J.E.M.	1 „	15	Scarlet Fever.
11	„ 9	L.L.	4 „	11	Scarlet Fever.
12	Aug. 6	W.F.	7 „	18	Scarlet Fever.
13	„ 13	M.S.	32 „	9	Abscess of Liver
14	„ 28	J.C.	2 „	14	Scarlet Fever.
15	Sep. 22	E.C.	1 „	6	Acute infective gastro-enteritis.
16	„ 22	E.J.J.	10 „	1	Scarlet Fever.
17	„ 27	B.O.H.	8 „	11	Tuberculosis of hip joint.
18	Oct. 3	E.D.	2 „	1	Scarlet Fever.
19	„ 10	A.M.L.	38 „	26	Enteric Fever.
20	„ 18	W.L.	2 „	2	Acute infective gastro-enteritis.
21	„ 29	E.S.	35 „	1	Enteric Fever.
22	„ 30	A.S.	2 „	25	Scarlet Fever.
23	Nov. 11	T.S.	15 „	19	Enteric Fever.
24	Dec. 7	E.S.	30 „	3	Enteric Fever.
25	„ 7	J.O.	6 „	2	Scarlet Fever.
26	„ 13	J.R.	5 „	11	Scarlet Fever.
27	„ 19	J.B.	2 „	19	Scarlet Fever.

TABLE LXXI.

The following bacteriological work has been carried out at the Fever Hospital Laboratory during 1908.

Material Examined.	Positive	Negative	Total
FOR TUBERCLE BACILLI :			
Sputum	98	300	398
Udders	12	4	16
Urine	1	1	2
Fæces .....	...	1	1
Cerebro Spinal Fluid .....	...	1	1
FOR DIPHTHERIA BACILLI :			
Throat Swabs	71	285	356
Nose Swabs	24	33	57
Ear Swabs .....	...	1	1
Vaginal Discharge	1	..	1
FOR TINEA :			
Hair	7	12	19
FOR ANTHRAX BACILLI :			
Blood .....	...	1	1
Bull's Blood .....	...	1	1
FOR STREPTOCOCCI :			
Sputum .....	...	2	2
FOR DIPLOCOCCUS :			
Blood	1	...	1
FOR DIPLOCOCCUS INTRACELLULARIS :			
Cerebro Spinal Fluid .....	...	1	1
Totals... ..	215	643	858

CONVERSION OF PRIVY MIDDENS.

99 Privy Middens have been ordered by the Health Committee to be converted during the year, compared with 276 during 1907.

The immense superiority of the fresh-water carriage system over the other systems is recognised by all sanitarians.

I wish to draw attention again to the great desirability of replacing the old brick ashpits which remain after privy middens have been converted, by portable covered metal ash-bins of approved type and size. A suitable size is 24 inches by 18 inches, and a sample may be seen at the Municipal Offices in Victoria-street.

There now remain about 360 privies in the Borough which have not been converted. Many of these are on the outskirts of the town, and many are not within 100 feet of any sewer.

Of these 360 privies there are about 220 which can be converted and connected to various sewers.

PAIL CLOSETS.

This form of sanitary convenience is most objectionable inasmuch as it necessitates the accumulation of fæcal matter near dwellings, and frequently involve pollution of the parts surrounding the pails, if they are not replaced carefully after being emptied. Such conditions are aggravated in hot summer weather. Another objection is that they militate against habits of cleanliness and decency. In fact, it is difficult to say anything good in their favour. I would therefore urge strongly that all steps possible should be taken to replace these abominable conveniences by water-closets.

Several pail-closets have been converted to w.c.'s during the year, but there still remain about 10,200 in the Borough.

SLOP-WATER CLOSETS.

There are at present in Blackburn 2,383 slop-water closets.

SCAVENGING.

It is important in removing the contents of ash-bins that there should be as little soiling of the surface of streets and back passages as possible.

The following statement represents the work done in this branch during the year 1908 :—

Wet Ashpits emptied	1,081
Dry Ashpits emptied	163,963
Ashes Tubs emptied	450,151
Excreta Tubs emptied	587,701
Excreta Tubs cleansed	587,596

1.047 Loads Dry Ashes Refuse were tipped. No other Refuse was tipped during the year.

The following power was obtained in the Blackburn Corporation Act of 1908, with reference to dust-bins :—

Section 60.

The Corporation may by notice in writing require the owner or occupier of any dwelling-house to provide galvanized iron or enamelled iron dust-bins in lieu of ash-pits, and such dust-bins shall be of such size and construction as may be approved by the Corporation, and any owner or occupier who fails within fourteen days after notice given to him to comply with the requirements of the Corporation shall for every such offence be liable to a penalty not exceeding twenty shillings, and to a daily penalty not exceeding five shillings.

Provided that in any case where the Corporation require a galvanized iron or enamelled iron dust-bin to be provided in lieu of any ash-pit in use at the passing of this Act, they shall,

except in any case in which the Medical Officer of Health or the Inspector of Nuisances shall have certified that owing to wilful neglect on the part of the owner, after due notice to keep the same in proper repair, any such ash-pit is in such a state as to create a nuisance or be injurious to health, bear and pay such sum towards the expense of providing such galvanized iron or enamelled iron dust-bin (being not less than one-half thereof), as they may consider just and proper according to the circumstances, and the remainder of such expenses shall be borne by the owner.

Provided also that if and so often as the Corporation under this section require such galvanized iron or enamelled iron dust-bin to be provided in lieu of any ash-pit which they have before the passing of this Act required or caused to be altered or have approved as altered by resolution or in writing under the hand of the Medical Officer of Health or Inspector of Nuisances, all the expense of providing such galvanized iron or enamelled iron dust-bin shall be paid by the Corporation.

Provided further that in any case, where the Corporation require a galvanized iron or enamelled iron dust-bin. to be provided for the use of any dwelling-house, which at the time of such requirement is provided with an ash-tub of suitable size and in proper order and condition, the Corporation shall pay the cost of providing such galvanized iron or enamelled iron dust-bin.

DESTRUCTORS.

An account of the four Destructors built and worked by the Corporation was given in my Annual Report for 1905.

The refuse during 1908 was destroyed at the following Destructors :—

Audley Destructor :

	Tons.	Cwts.	Qrs.
Dry ashes refuse	5,952	14	2
Midden refuse	457	19	2
Fish and market refuse, diseased carcases, etc.	1,486	11	0
Total	7,897	5	0

Greenbank Destructor :

Dry ashes refuse	10,905	1	2
Midden refuse	56	3	0
Fish and market refuse	76	12	2
Total	11,037	17	0

Wensley Fold Destructor :

Dry ashes refuse	11,170	0	3
Fish and market refuse, diseased carcases, etc.	467	7	1
Total	11,637	8	0

Store Yard Destructor :

Dry ashes refuse : Total	2,043	19	3
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TABLE LXXII.

REFUSE DESTROYED AT DESTRUCTORS, 1908.

Month	Dry Ashes Refuse			Midden Refuse			Fish, Carcases, Market Refuse, &c.			Totals.		
	T.	C.	Q.	T.	C.	Q.	T.	C.	Q.	T.	C.	Q.
Jan	2767	3	3	49	2	2	138	9	1	2954	15	2
Feb.	2609	14	0	45	10	0	141	11	3	2796	15	3
Mch.	2971	4	1	71	3	2	147	0	1	3189	8	0
Apl.	2628	4	2	46	0	2	143	9	0	2817	14	0
May	2692	14	1	52	3	0	169	16	1	2914	13	2
June	2375	4	2	54	9	0	171	8	0	2601	1	2
July	2266	15	2	77	5	3	181	12	1	2525	13	2
Aug	1996	5	2	33	10	1	191	10	3	2221	6	2
Sept.	2422	0	2	33	18	1	208	2	3	2664	1	2
Oct.	2328	9	1	34	4	1	212	3	2	2574	17	0
Nov	2430	19	3	16	15	2	170	6	2	2618	1	3
Dec	2583	0	3	0	0	0	155	0	2	2738	1	1
Totals	30071	16	2	514	2	2	2030	10	3	32616	9	3

SEWAGE DISPOSAL.

The following is a brief account of the method of dealing with Blackburn Sewage, for which I am indebted to Dr. Pickard :—

The larger portion of the Sewage of the Borough is collected by gravitation at Witton, where it is screened and passed through catchpits to remove the gravel and rags which have obtained access to the sewers. It then travels to Samlesbury, a distance of $4\frac{1}{2}$ miles, in duplicate cast-iron pipe syphons and brick tunnels. A portion of the sewage from the low-lying districts is now lifted into the conduits by new electrically-driven centrifugal pumps, situated at Fenisccliffe Bridge. Another main conduit takes the sewage from Beardwood district to Samlesbury.

On arriving at Samlesbury the sewage passes through a detritus tank into the septic tanks. These are two in number, and together hold six million gallons, being a dry-weather flow of about 30 hours. After septicisation, the sewage is treated with lime and sedimented in six tanks which have a total capacity of about one million gallons. The effluent from these tanks is then treated either on percolating sprinkler beds, or on double contact beds. The sprinkler beds, 19 in number and each 80 feet in diameter, are fitted with revolving distributors. They are constructed of rubble stone and filled to a depth of nine feet with broken stone and destructor clinker. The small amount of suspended matter in the effluent from the sprinkler beds is removed in five separator tanks. The sprinklers will deal with up to five million gallons of sewage per day, according to the strength of the sewage. There are twelve pairs of double contact beds, which are filled with graded stone, destructor clinker, and iron slag. A little over one million gallons of sewage per day is treated on these beds, the effluent from which passes directly into the river. There is also ample provision for the treatment of storm-water. This passes into ten tanks which were constructed for chemical precipitation and which together hold

1 $\frac{3}{4}$ million gallons. After sedimentation in these, the storm-water (in excess of six million gallons per day) is distributed over about 400 acres of farm land contoured and partially drained for broad irrigation.

WATER SUPPLY.

Blackburn has fortunately an excellent water supply. It is a moorland water, coming from the Brennand and Whitendale Valleys, about 20 miles from the Borough.

ANALYSIS OF WATER.

I am indebted to Dr. Pickard for the following results :—

TABLE LXXIII.

Typical Analysis of Blackburn Water. All four samples were drawn from the Main at the Technical School.

Date	14/1/08	3/3/08	16/6/08	12/10/08
Total Solids in Solution	6.44	5.76	6.92	5.6
Including Volatile Matter	4.00	3.04	3.52	2.4
Chlorides in terms of Chlorine	1.0	1.0	1.0	1.0
Saline Ammonia	0.001	0.001	0.001	0.001
Organic Ammonia	0.010	0.011	0.008	0.009
Nitrogen as Nitrates...	0.036	0.031	0.036	0.034
Permanent Hardness ...	3.05	2.70	3.20	3.26
Temporary Hardness ...	0.33	0.20	nil	0.12

All results are in parts per 100,000.

Other samples have been analysed during the past year, but the above are representative ones.

I am indebted to the Borough Engineer for the following records of rainfall during 1908 in connection with the Blackburn Corporation Waterworks :—

Table LXXIV.—RAINFALL at the following Stations in the Counties of Lancaster and York.

LANCASHIRE.															WEST RIDING OF THE COUNTY OF YORK.				
Blackburn	Blackburn Corporation Store Yard	Blackburn High Level Pumping Station.	Witton	Corporation Park.	Guide	Daisy Green	Pickup Bank	Hollesd'n Sewage Works.	Dunsop Houses	Frennand	Whitdale	Cabinhill	Middle Knoll	Baxton Fell					
Elevation 447. Gauge 6 ft. above ground	Elevation 373	Elevation 600	Elevation 345	Elevation 550	Elevation 650	Elevation 961	Elevation 720	Elevation 681	Elevation 450	Elevation 820	Elevation 831	Elevation 1559	Elevation 1206	Elevation 1540					
1908.																			
January	2.57	2.77	3.83	3.69	3.73	3.13	3.99	3.94	4.12	6.96	7.47	7.99	6.20	7.00	7.60				
February	2.04	2.03	3.74	3.88	3.62	3.23	4.21	4.16	4.51	5.91	7.29	7.49	6.00	6.20	6.50				
March ...	2.62	2.50	3.35	3.51	3.13	3.09	3.79	3.83	4.12	4.39	4.87	5.25	3.60	3.10	3.30				
April ...	1.60	1.67	2.09	2.16	2.14	2.59	2.60	2.65	2.73	3.11	3.31	3.11	2.70	2.40	2.30				
May ...	2.70	2.71	2.96	3.25	2.87	3.59	3.22	3.17	3.47	3.89	4.81	4.30	5.40	4.10	3.90				
June	1.34	1.42	2.09	2.16	2.08	1.94	2.17	2.09	2.21	3.52	4.19	3.61	3.30	3.60	3.30				
July	2.86	3.00	3.84	4.23	4.33	4.70	4.67	4.75	5.10	6.94	6.64	6.42	5.90	5.70	6.00				
August ..	3.10	3.23	4.40	4.35	4.07	4.43	4.37	4.31	4.47	6.08	6.55	6.30	6.30	5.40	6.10				
Sept'ber	3.68	2.80	4.88	4.77	4.67	4.13	4.51	4.50	4.95	7.69	8.75	8.92	9.10	7.80	8.90				
October	1.04	1.18	1.44	1.55	1.52	1.86	2.33	2.35	2.28	3.32	3.66	3.32	3.00	3.10	3.50				
Nov'ber	3.12	2.56	3.99	4.13	4.09	3.11	3.76	3.52	4.15	6.42	7.40	7.26	7.40	6.00	6.50				
Dec'ber	1.65	1.92	2.62	2.99	2.63	2.37	3.14	3.22	3.36	6.00	6.15	6.31	5.00	6.00	5.60				
Totals for 1908	28.32	27.88	39.23	40.67	38.88	38.17	42.76	42.49	45.50	64.83	70.99	70.28	63.90	60.70	63.50				

AVERAGES FOR TEN GAUGES :—38'c8.

AVERAGES FOR SIX GAUGES :—65'70.

RAINFALL IN																
1907.....	29.99	32.92	41.13	44.44	42.39	39.40	45.93	45.63	48.88	39.80	06.16	69.48	72.69	84.82	57.50	61.80
1906.....	31.40	34.27	44.55	43.81	43.02	40.29	48.97	47.89	51.06	39.65	67.11	76.73	77.91	68.70	55.60	63.00
1905	24.46	28.35	34.73	33.39	35.38	30.80	40.72	40.46	42.23	31.70	54.02	63.85	61.72	60.30	50.40	51.90
1904	25.22	31.10	34.88	35.00	35.84	30.39	40.95	40.59	43.21	32.22	55.69	63.85	62.31	55.20	46.00	51.60
1903	38.82	44.76	50.42	52.28	52.08	44.02	57.05	56.79	61.43	—	83.43	86.34	89.94	75.10	76.30	77.40
1902.....	28.18	31.48	38.76	37.98	37.75	32.80	40.72	38.88	42.38	—	49.50	61.22	58.92	57.73	46.35	47.51
1901.....	25.36	29.84	33.83	34.97	34.51	30.94	39.74	37.30	45.44	—	49.61	59.20	62.90	49.50	45.00	55.40
1900	—	36.05	—	43.37	43.77	44.42	49.32	48.98	53.52	—	63.98	70.16	70.43	61.35	65.55	61.65
1899	35.61	33.67	42.11	40.85	40.78	37.33	44.43	46.67	63.50	—	60.17	61.34	64.39	57.26	51.10	54.10
Sanbury N.Y.'s Hill Farm.																
1898.....	28.57	29.79	35.16	39.97	—	38.04	41.00	43.13	54.27	31.24	61.27	67.96	76.35	75.50	57.28	59.80
1897	35.98	36.34	42.27	45.42	—	43.44	53.43	54.49	57.42	38.35	70.21	73.64	78.98	68.00	61.30	62.45
1896.....	32.70	33.34	40.82	41.89	—	40.84	55.10	54.36	56.80	31.40	60.48	73.24	70.52	56.85	52.85	56.45
1895.....	29.65	31.44	38.80	37.51	—	34.70	46.91	45.68	62.64	22.24	56.61	64.40	64.94	52.48	49.95	54.43
1894	25.69	31.49	40.73	41.54	—	38.15	51.18	48.42	71.31	32.26	71.36	76.68	77.40	63.87	57.55	61.80
1893....	30.90	32.79	40.20	39.99	—	31.24	45.41	43.79	48.80	36.56	63.83	69.06	74.86	64.62	54.15	50.12
Pleington																
1892....	29.22	33.63	40.93	40.73	—	38.90	48.93	45.06	48.97	43.02	64.07	70.50	72.21	59.41	51.81	58.06
1891.....	28.34	34.70	39.57	45.48	—	40.07	66.01	53.32	60.24	46.90	66.20	75.36	77.41	69.40	58.80	56.40
1890.....	31.60	35.56	42.34	44.60	—	38.40	63.23	46.36	53.97	42.73	66.66	78.44	82.47	73.35	57.53	54.81
1889	25.26	29.78	37.08	36.43	—	34.22	44.35	42.63	47.34	35.44	59.06	66.78	69.79	64.26	56.32	47.37
1888.....	23.51	28.29	37.47	35.81	—	31.34	39.57	40.27	43.41	31.90	56.38	66.25	66.26	62.69	52.30	49.91

DISINFECTANTS.

The following quantities of Disinfectants have been used during 1908 :—

1. Chloros : 1,190 gallons.
 2. Izal : 60 gallons.
 3. Chloride of Lime : 3 tons 11 cwts.
 4. Sanitary Dry Lime : 7,360 7lb. bags.
- Carbolic Powder : 140 gross 1lb. dredgers.

The total cost of the above disinfectants was £338 8s. 11d.

HOUSE DRAINAGE.

There has been a continuance of the special attention to house drains, and one Inspector devotes his whole time to this work. Instances of various conditions of defective drainage which are constantly being remedied by the Health Department, were given in my Annual Report for 1906.

During the year 1908, 481 drains were inspected, necessitating the application of the smoke-test in 576 cases and of the water-test in 596 cases.

367 drains were found defective, and of these, 263 were re-laid throughout and stood the water-test : 17 drains were partly re-laid and stood the water-test. Also 40 were partly re-laid and passed on examination owing to short lengths.

The instances of defective drains not re-laid at the end of December, 1908, were 47.

During the re-laying and repairing of drains, 1,619 visits were made, including 596 water-tests.

The drains not re-laid or other work outstanding on December 31st, 1907, were 31, and of these 13 have been re-laid

together with 13 new branch drains which have been constructed, necessitating 17 water-tests ; and also 11 were passed on examination, owing to short lengths ; 24 new gullies, 26 new lip dish-stones, and 7 inspection chambers have been constructed. The surfaces of 10 yards have been flagged throughout, and 3 have been repaired. Two new pedestal wash-down closets have been provided and fixed. Twelve rain-water spouts have been repaired. This work has been carried out in a very satisfactory manner.

The following power was obtained in the Blackburn Corporation Act of 1908, with reference to combined drains :—

Section 68.

(1) If it appears to the Corporation that two or more houses may be drained more economically or advantageously in combination than separately, and a sewer of sufficient size already exists or is about to be constructed within one hundred feet of any part of such houses, the Corporation may when the drains of such houses are first laid order that such houses be drained by a combined drain to be constructed either by the Corporation, if they so decide, or by the owners, in such manner as the Corporation shall direct, and the costs and expenses of such combined drain and of the repair and maintenance thereof shall be apportioned between the owners of such houses in such manner as the Corporation shall determine and if such drain is constructed by the Corporation, such costs and expenses may be recovered by the Corporation from such owners summarily as a civil debt.

(2) Any combined drain constructed in pursuance of this section shall for the purposes of the Public Health Acts be deemed to be a drain and not a sewer.

(3) Provided that the Corporation shall not (save with the consent of the owner or owners of the said houses) exercise the powers conferred by this section in respect of any house plans

for the drainage of which (otherwise than by combined drain) shall have been previously approved by the Corporation.

Section 69.

The powers given by Section 19 of the Public Health Acts Amendment Act, 1890, in relation to two or more houses belonging to different owners shall extend and apply to two or more houses belonging to the same owner.

The following statement shows in detail the drainage work which has been carried out during the year 1908 :—

No. of Drains inspected	481
.. Drains tested on account of Typhoid Fever...	69
.. Drains tested on account of Diphtheria	95
.. Drains tested owing to Complaints	93
.. Drains tested at the request of Owners or New Tenants	46
.. Drains tested owing to other causes	178
.. Letters from the Medical Officer of Health...	201
.. Preliminary notices served	18
.. Legal notices served	12
.. Cases in which work carried out by verbal arrangements	33
.. Visits to work in progress	1,619
.. Drains tested (a) smoke	576
.. .. (b) water	596
.. Drains examined apart from above (a and b) by breaking down	69
.. Drains traced for leakage with coloured solution	84
.. Drains found defective	367
.. Drains tested and found not defective	114
.. Drains re-laid throughout which stood the water-test	263
.. Drains partly re-laid which stood the water- test (short length)	17

No. of	Drains partly re-laid and passed on examination (short length)	40
„	Defective drains not re-laid at the end of December, 1908	47
„	Drains opened and cleansed (not re-laid) ...	11
„	Defective gullies replaced	290
„	New lip dishstones provided	300
„	Inspection chambers provided	93
„	Slop-water closet drains opened and cleansed	10
„	Downspouts repaired	146
„	Soil-pipes replaced or repaired	66
„	Surfaces of yards flagged after drains re-laid	114
„	Surfaces of yards repaired after drains re-laid	31
„	Pail-closets converted to w.c. 's	11
„	Sink-pipes repaired	101
„	Useless drains removed from cellar premises	10
„	Slop-water closets converted to pedestal wash-downs	9
„	Flushing apparatus repaired	66
„	New pedestal wash-downs provided	50

HOUSING OF THE WORKING CLASSES.

During the year, I presented to the Health Committee a Special Report on the Housing of the Working Classes in Blackburn. That inquiry occupied about nine months and necessitated visits for information, measurements, etc., to 20,000 houses. In addition 856 houses were re-visited in order to confirm several points which appeared in the reports of the first visits.

A large number of tables appeared in the Special Report indicating the number, age, sex of occupants, and the number and size of rooms.

Generally speaking, the separation of the sexes in sleeping accommodation appeared to be a greater difficulty to surmount than actual overcrowding as calculated upon the number of

cubic feet per head. In other words there appeared to be a demand for a larger number of houses with three bedrooms.

Between September, 1907, and March, 1909, 433 houses have been erected in Blackburn, as follows :—

116 houses with 2 bedrooms.				
283	„	„	3	„
34	„	„	4	„ (or more).

HOUSES LET IN LODGINGS.

In the Blackburn Corporation Bill, during 1908, power was asked for that the provisions of Section 79 (Annual Registration of Common Lodging-house Keepers) of the Act of 1901 shall extend and apply to houses let in lodgings, as if such houses had been common lodging-houses.

Power was also asked for that the Corporation should make bye-laws generally for the well ordering of such houses.

The Police and Sanitary Committee of the House of Commons struck out these clauses, owing to lack of precedent.

As is known, Section 79 of the Blackburn Corporation Act of 1901 requires an application for the renewal of the registration of every common lodging-house, to be made in the month of May every year, and the Corporation may refuse to register any house which they do not consider suitable for the purpose of a common lodging-house, or if they are satisfied that the person applying is not qualified to be the keeper of such common lodging-house, they may refuse to register such keeper.

In Blackburn the houses let in lodgings with which the Corporation wished to deal consist of old four-roomed dwelling-houses and closed beerhouses situated in the poorer districts. They are therefore adapted buildings for tenement purposes, and consequently many defects in arrangement and in sanitary conditions frequently occur.

The present condition of these houses may be stated briefly as follows :—

Sometimes all four rooms, but as a rule three out of the four (that is to say all but the scullery) are let, scantily furnished with tables, chairs, beds, and a few cooking utensils, often purchased for a small sum at a cheap furnishing broker's shop. An average of 4s. 1d. per week is charged as the rent of the ground floor rooms, and 3s. 6d. per week for the rooms upstairs. Each room is occupied by a separate tenant or family.

The conditions are generally better in the ground floor rooms than in the upper rooms, because the former contain an oven and cupboards and are conveniently near the back room downstairs (or scullery), where there is a slopstone, and often a wash-boiler, and a back-door leading to a yard in which the sanitary conveniences are placed. If, however, this back room downstairs should be let to another family, the door connecting these two ground floor rooms is often kept locked, thus converting that floor into a back-to-back house. Of course, if this door was not locked, the front room downstairs would be accessible to tenants of the other rooms, which is not desirable. I fear that this is a structural difficulty resulting from the fact that these houses are being used for a purpose for which they were not built, and that suitable adaptation from every point of view is impracticable.

Again, the rooms on the upper floors contain only a small bedroom firegrate, and they have no water-tap, sinkstone, or means for storing food and keeping coal.

I have often seen one of these upper rooms in the following state :—

About 1 cwt. of coal in a corner of the room, a line hanging across the room from which clothes recently washed were suspended, food exposed on the table near the bed, a bucket containing slop-water on the floor, and an accumulation of burnt ashes near the fireplace.

The disadvantages of these conditions from a hygienic point of view are obvious.

In no instance has my advice been asked as to whether or not any house was suitable for use as a "house let in lodgings" before it was occupied as such.

Powers were asked for in the Bill that these houses should be registered before being used for this purpose, in order that certain conditions may be imposed upon the landlord before registration could be granted. Such conditions would include the prohibition of the back room downstairs (scullery) being occupied separately. This would give the three separate families opportunities for washing of clothes, emptying of slop-water, etc., in a room not used as a dwelling. Also the landlord might be instructed to fix a proper enamelled wash-basin in each room, a cupboard for storing food, and a coal box in each room. In short, each room which it was desired to let separately would be treated as a dwelling and provided with as many comforts as possible.

Considering the handsome return which many of these landlords receive on a small outlay, I am sure that such conditions would not be any hardship.

In any case, if the conditions of these houses could not be made perfect, they would be improved materially if the powers asked for had been granted.

There is a great need for the powers of the Corporation to be strengthened with respect to these houses.

At present no registration or approval of the keepers is necessary, and even if the bye-laws relating to houses let in lodgings are carried out, the Corporation are unable to control such houses effectively.

Houses should be inspected and approved before they are allowed to be used as houses let in lodgings. Also the char-

acters of the proposed keepers or landlords should be investigated, as is the case with common lodging-houses.

After such houses had been approved it would be desirable to have powers to strike off the Register at any time any house not kept in good order.

If the Corporation had been granted power to refuse to register any house on the ground of unsuitability or on the ground of the qualification of the proposed keeper, I think that in a very short time the town would have a much better class of houses let in lodgings, and also better qualified and more suitable keepers.

INSANITARY PROPERTY.

Houses ordered to be closed :—

- 1, 2, 3, 4, and 6. Pleckgate.
- 97, 99, 119, 121, and 123. Shear Brow.
- 3, 5, 7, 9, and 11. Buxton-street.
- 10, 12, and 14, Wood-street.

Houses ordered to be altered to the satisfaction of the Medical Officer of Health, or closed :—

- 101, 107, 115, and 117, Shear Brow.
- 63, 65, and 67, Shear Brow.
- 5, Pleckgate.
- 1, Paddock.
- 3, Wimberley-street.

Houses demolished :—

- 1, Buxton-street.
- 6, Crook-street.

SYSTEMATIC INSPECTIONS.

The Local Government Board require that the Medical Officer of Health, in reporting his proceedings and advice, should put on record whether he has made systematic inspections of his district. By "systematic inspections" are meant inspections independent of such inquiries as the Medical Officer of Health may have to make into particular outbreaks of disease, or into unwholesome conditions to which his attention has been specially called by complaints or otherwise; and such inspections will include the house-to-house inspections which may be necessary in particular localities.

In the Annual Report for 1903 a statement was made, giving a description of the four districts into which the Borough has been divided, so that one of the four District Inspectors could be attached to each.

For census purposes the Borough has been divided into three districts, namely, Northern, Southern, Witton and Livesey.

Each of these three districts has been divided into Enumeration Districts (see Map). Thus the Northern Division has been divided into 60 Enumeration Districts, the Southern Division into 49 Enumeration Districts, and Witton and Livesey Division into 21 Enumeration Districts.

Such an arrangement greatly facilitates not only the systematic inspections, but also the keeping of records.

The following is a statement of the systematic inspections which have been carried out by the four District Inspectors during 1908. In addition, of course, large numbers of visits have been made in answer to complaints received, and also in reference to compulsorily notifiable and voluntarily notifiable infectious diseases.

DISTRICT No. 1.

ENUMERATION DISTRICT.—25 SOUTHERN.

Name of street.	No. of houses inspected.
31 to 93 Lambeth Street	31
128 to 190 Lambeth Street	32
1 to 43 Queen's Park Road	22
4 to 70 Nottingham Street	34
1 to 55 Ripon Street ..	28
2 to 100 Ripon Street	50
155 to 229 Pringle Street	38
167 to 237 Walter Street	36
1 to 19 Lincoln Street	10

DISTRICT No. 2.

ENUMERATION DISTRICT.—58 NORTHERN.

10 to 60 Goldhey Street	26
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ENUMERATION DISTRICT.—40 NORTHERN.

49 to 59 Hickory Street	6
Cottage Homes, Hickory Street	2
119 to 131 Hickory Street	7
42 to 50 Troy Street	5
1 to 123 Poplar Street	62
2 to 124 Poplar Street	62
46 to 118 Walnut Street	37

ENUMERATION DISTRICT.—16 NORTHERN.

13 to 23 Cobden Street	6
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DISTRICT No. 3.

ENUMERATION DISTRICT.—45 SOUTHERN.

Name of street.	No. of houses inspected.
2 to 26 Taylor Street	13
3 to 31 Dickinson Street	15
1 to 33 Roebuck Street	17
18 to 34 Roebuck Street	9
3 to 33 Essex Street	16
4 to 16 Essex Street	7
2 to 26 Minden Street	13
6 to 42 Heatley Street	19
1 to 29 Heatley Street	15

ENUMERATION DISTRICT.—44 SOUTHERN.

2 to 32 Lord Byron Street	16
1 to 21 Lord Byron Street	11
1 to 29 Radcliffe Street	15
18 to 26 Shakespeare Street	5
23 to 29 Bank Top ..	4
2 to 22 Wellesley Street	11

ENUMERATION DISTRICT.—41 WITTON & LIVESEY.

2 to 8 Bridgewater Street	4
2 to 16 Haworth Street	8
1 to 17 Haworth Street	9
1 to 13 Furness Street	7
2 to 16 Furness Street	8
2 to 28 Dixon Street	14
1 to 23 Dixon Street	12
1 to 35 Pink Street	18
3 to 21 West Street	11

DISTRICT No. 4.

ENUMERATION DISTRICT.—48 SOUTHERN.

Name of street.	No. of houses inspected.
27 to 117 Galligreaves Street.....	96
1 to 101 Craig Street	51
2 to 100 Craig Street	50
9 to 21 Taylor Street	7
40 to 58 Lower Hollin Bank Street	10
1 to 31 Hamilton Street	16
2 to 34 Hamilton Street	17
50 to 66 Hollin Street	9
2 to 16 Fletcher Street	8
1, 3, 5, 7, 27, 29, and 31 Fletcher Street.....	7

DEATH-RATES IN THE ENUMERATION
DISTRICTS.

It is interesting to compare the annual death-rates in the various Enumeration Districts of the Borough.

They vary from 6.6 in District No. 39 of the Northern Division, to 73.9 in District No. 1 of the Southern Division. (This district, however, contains the Larkhill Street Common Lodging-house.)

ECONOMIC VALUE OF A REDUCED DEATH-RATE.

It has been shown that each member of the community has a definite money value based upon the power of earning wages.

The value in the case of each male has been estimated by taking as the standard a labourer, and capitalising the wages earned by him, the means of subsistence being deducted.

The average net value of each male life is found to be £150. Assuming that one-half of the 317 lives gained in Blackburn during 1908, on the average of the previous ten years, were males, there would be a net gain to the wealth of the community of £23,700.

Assuming also that the remaining female lives were also equal to a certain money value, the net gain in wealth would exceed this sum.

TABLE LXXV.

NAME OF DISEASE	1898	1899	1900	1901	1902	1903	1904	1905	1906	1907	Average 1898 to 1907	1908
Cancer	0.74	0.63	0.77	0.71	0.69	0.70	0.81	0.85	0.80	0.84	0.75	0.79
Diarrhoea	1.59	0.87	1.33	1.04	0.53	0.76	0.94	0.70	1.28	0.41	0.94	1.12
Respiratory Diseases..	3.70	4.65	4.95	3.82	3.56	3.41	3.79	3.10	2.73	3.73	3.74	3.00
Measles	0.38	0.31	0.59	0.73	0.58	0.40	0.45	0.31	0.47	0.33	0.45	0.11
Erysipelas	0.04	0.03	0.02	0.02	0.02	0.007	0.02	0.01	0.06	0.02	0.02	0.02
Diphtheria	0.25	0.58	0.71	0.48	0.17	0.19	0.08	0.24	0.19	0.12	0.30	0.08
Scarlet Fever	0.12	0.10	0.65	0.45	0.22	0.09	0.09	0.57	0.24	0.15	0.26	0.14
Typhoid Fever	0.23	0.31	0.23	0.13	0.17	0.11	0.15	0.11	0.10	0.09	0.16	0.10
Whooping Cough	0.03	0.41	0.41	0.17	0.17	0.10	0.72	0.08	0.12	0.30	0.25	0.19
Old Age	0.77	0.98	0.75	0.77	0.82	0.96	1.15	1.04	1.07	1.19	0.95	1.04
Influenza.....	0.19	0.23	0.64	0.15	0.20	0.20	0.12	0.15	0.16	0.32	0.23	0.25
Premature Birth	0.61	0.67	0.74	0.53	0.53	0.63	0.60	0.50	0.53	0.57	0.59	0.48
Nervous Diseases	2.21	1.98	2.07	1.79	1.55	1.41	1.44	1.52	1.71	1.62	1.73	1.80
Digestive Diseases	2.59	1.83	1.22	1.13	0.73	0.56	0.59	0.63	0.58	0.63	1.04	0.63
Urinary Diseases	0.33	0.48	0.51	0.54	0.46	0.44	0.52	0.58	0.32	0.60	0.47	0.45
Phthisis	1.22	1.20	1.16	1.17	1.25	0.93	0.94	1.06	0.92	0.98	1.08	1.09
Heart Diseases	1.29	1.41	1.32	1.25	1.28	1.44	1.47	1.16	1.39	1.47	1.34	1.27
Other Tubercular Diseases (excluding Tabes Mesenterica)	0.22	0.35	0.39	0.44	0.57	0.48	0.34	0.42	0.44	0.39	0.40	0.30
Tabes Mesenterica	0.27	0.15	0.37	0.27	0.18	0.21	0.30	0.20	0.25	0.26	0.24	0.20
Ill-defined	1.63	1.46	1.43	0.85	0.94	0.57	0.37	0.85	0.63	0.63	0.93	0.51
Violence	0.40	0.57	0.55	0.52	0.47	0.45	0.43	0.45	0.51	0.52	0.48	0.56

Table showing gains and losses in the death-rate per 1000 persons living in the year 1908, as compared with the average rate of ten years 1898-1907 :—

TABLE LXXVI.—GAINS.

NAME OF DISEASE.	Average rate during 10 years, 1898-1907.	Rate during 1908.	Gains per 1000.	Probable No. of lives gained.
All Causes	18·16	15·94	2·22	317
Respiratory Diseases..	3·74	3·00	0·74	106
Measles	0·45	0·11	0·34	48
Erysipelas	0·02	0·02	0·00	0
Diphtheria	0·30	0·08	0·22	33
Scarlet Fever	0·26	0·14	0·12	17
Typhoid Fever	0·16	0·10	0·06	8
Whooping Cough.....	0·25	0·19	0·06	8
Premature Birth	0·59	0·48	0·11	15
Digestive Diseases ...	1·04	0·63	0·41	58
Urinary Diseases	0·47	0·45	0·02	3
Heart Diseases.....	1·34	1·27	0·07	10
Other Tubercular Diseases excluding Tabes Mesenterica	0·40	0·30	0·10	14
Tabes Mesenterica ...	0·24	0·20	0·04	6
Ill-defined	0·93	0·51	0·42	60
Gross Gains			2·71	386

LOSSES.

NAME OF DISEASE.	Average rate during 10 y'rs 1898-1907	Rate during 1908.	Losses per 1000	Probable No. of lives lost
Cancer	0·75	0·79	0·04	6
Diarrhœa	0·94	1·12	0·18	25
Old Age	0·95	1·04	0·09	13
Influenza	0·23	0·25	0·02	3
Nervous Diseases.....	1·73	1·80	0·07	10
Phthisis	1·08	1·09	0·01	1
Violence	0·48	0·56	0·08	11
Other Diseases	1·81	1·81	0·00	0
Gross Losses			0·49	69

Nett gain 2·22 or 317 lives.

The death of a person in a population of 135,278 corresponds to a rate of 0·007 per 1000. Hence the saving or loss of a rate of:—0·007 means the saving or loss of one human life.

similarly	0·035	„	„	„	five	„	lives
and	0·070	„	„	„	ten	„	„
therefore	2·220	„	„	„	317	„	„

BLACKBURN UNION. Poor Law Relief Statistics.

TABLE LXXVII.

	Half-year ended Lady Day, 1908.	Half-year ended Mich'lmas, 1908.	Total.
	£ s. d.	£ s. d.	£ s. d.
Cost of Out-door relief in Township of Black- burn	3271 15 9	3671 6 10	6943 2 7
	Persons in receipt of relief on July 1, 1908	Persons in receipt of relief on Jan. 1, 1909	
Males	251	260	
Females	610	652	
Children	335	396	
Total	1196	1308	2504

Statement of the number of Indoor Paupers relieved in the Blackburn
Union Workhouse.

	Persons in receipt of relief on July 1, 1908	Persons in receipt of relief on Jan. 1, 1909	Total.
Able-bodied	249	402	
Not Able-bodied . . .	415	493	
Insane	139	140	
Children	85	89	
Totals	888	1124	2012
Numbers included in above statement who were inmates of the Workhouse Infirmary	216	251	
Children in Cottage Homes	103	111	
	Half-year ended Lady Day, 1908.	Half-year ended Mich'lmas, 1908.	
Vagrants	7746	8489	

I am indebted to Mr. C. E. Bygrave for these figures, which have an indirect bearing upon the health conditions and statistics of the town.

In December, 1905, a Royal Commission was appointed for the purpose of inquiring into the Working of the Laws relating to the Relief of Poor Persons in the United Kingdom, and also into the various means which have been adopted outside the Poor-laws for meeting Distress arising from Want of Employment.

During February, 1909, the Report of this Royal Commission on the Poor-laws and the Relief of Distress was issued, which consisted of a most voluminous document comprising two portions, one signed by the Majority and the other by the Minority. These two reports form the most important Blue Book of modern times, and as they contain problems and suggested solutions which, in the future, may alter the working of Health Departments, I have prepared the following short summary:—

Although there are two different sets of opinions, as shown by the Majority and the Minority Reports, both sides have many points in common. Both agree to abolish the direct election of the Guardians and with it the Guardians themselves; to abolish the Union area and the general Workhouse, substituting for the one a much larger area and for the other a system of classified Institutions; to substitute the name "Public Assistance" for Poor-law; to make the new area the County or the County Borough; and to make the Council either itself the Authority, or directly responsible for appointing the Authority.

The Majority recommend that the new Public Assistance Authority (which is to be helped by local Public Assistance Committees, who would investigate the cases on their merits) should be a Statutory Committee to be appointed by the Council, and that of this one-half may be members of the Council, and the other half are to be outside the Council, and to consist of persons experienced in the local administration of Public Assistance or other cognate work. Thus the presence and help of certain ex-Guardians and Charity Organisation Officials would be available.

On the other hand the Minority Report recommends that all the work of the existing Guardians should be handed over

bodily to the Council, and that the Poor-law should be broken up by dividing it amongst the different existing Committees for Health, Education, Pensions, etc.

The Majority Report recommends that the staff of Poor-law medical officers of the Local Government Board should be increased with a view to the periodic inspection by them of both in-door and out-door medical relief arrangements in co-operation with Public Assistance Authorities.

These Authorities should, in their administration of medical relief, have the assistance of a special County Medical Assistance Committee consisting of representatives of the Health Committee on the County, or County Borough Council; of the British Medical Association, local Hospitals, Nursing Associations, Provident Dispensaries, and Friendly Societies. Medical treatment is to be more readily available (subject to recovery of the cost) to all who are in need of it, and the Public Assistance Authority are to review and, where necessary, to supplement the medical needs of their area. They are to organise, with the co-operation of the British Medical Association, a system of Provident Dispensaries to which all local medical men may belong, and which shall afford to its members not only the privilege of choosing their own doctor but also that of obtaining institutional treatment, either in Public Assistance or any Voluntary Hospitals. Domiciliary medical assistance, or, as it is now called, out-door medical relief, is to be conditional upon the maintenance of a healthy domicile and good habits. Finally, it is recommended that no disfranchisement should be attached to any form of medical assistance.

The Minority Report gives prominence to the overlapping and rivalry of various local authorities which may be all at work in a single district, and to the lack of systematic organisation and of co-ordination. As previously stated, the Minority favour the whole of the work being carried out by the County or the County Borough with the assistance of various Committees. For example, they recommend that the provision for (a) children of school age, and (b) the sick and the permanently

incapacitated, the infants under school age, and the aged needing institutional care, should be assumed under the direction of the County and County Borough Councils by (*a*) the Education Committee, and (*b*) the Health Committee, respectively.

It is to be hoped that in the near future the various proposals set forth will receive the earnest consideration of Parliament.

METEOROLOGICAL OBSERVATIONS.

The Meteorological Station is situated on an open site in the Corporation Park.

Daily readings of each instrument are taken at 9 a.m. These instruments are:—

- 1.—Maximum Thermometer (Phillips's).
- 2.—Minimum Thermometer (Rutherford's).
- 3.—Hygrometer.
- 4 and 5.—Black and Bright Bulb Thermometers for Solar Radiation.
- 6.—Spirit Thermometer for Terrestrial Radiation.
- 7 and 8.—1 ft. and 4 ft. Earth Thermometers.
- 9.—Rain Gauge.
- 10.—Anemometer.
- 11.—Sunshine Recorder.
- 12.—Barometer (Fortin), kept at the Health Office.

A full description of the above instruments appeared in my Annual Report for 1903.

The total rainfall for 1908 was 38.88 inches, compared with 42.39 inches during 1907.

During 1908 rain fell on 237 days, compared with 230 in 1907.

The wettest month of 1908 was September, when there were 4.67 inches of rainfall.

The highest reading of the 4ft. Thermometer during 1908 was 56.8deg. F. on August 6th, 9th, 10th, 11th and 12th.

Also during 1908 there were 103 days without any bright sunshine, compared with 89 days during 1907.

TABLE LXXVIII.—METEOROLOGICAL REPORT FOR THE YEAR 1908.

	Mean Pressure		Mean Relative Humidity.	Mean of Maximum and Minimum Temperature.		Mean Temperature at 9 a.m. Readings	Under-ground Temperature		Mean Black Bulb in Vacuo.	Mean Bright Bulb in Vacuo.	Absolute extremes of Temperature.			Mean depression of minimum on grass below the shade.	Total bright sunshine.	Most sunshine in one day.		Direction of the Wind.								Mean daily movement of wind.	Total rainfall.					
	Station Level.	Sea Level.		deg.	deg.		deg.	deg.			deg.	deg.	deg.			deg.	deg.	deg.	deg.	hrs. min.	Am't.	Date	N.	N.E.	E.			S.E.	S.	S.W.	W.	N.W.
inches	inches	%	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	deg.	hrs. min.	Am't.	Date										Miles.	Inches				
January	29.537	30.095	93.9	35.5	35.1	36.1	40.2	53.4	43.9	30.0	17th 19.0	5th 26.7	3.8	46—45	5—0	10th	1	3	6	2	3	10	5	1	215.1	3.73						
February	29.590	29.985	91.3	39.5	39.6	38.9	40.5	64.5	49.0	48.5	22nd 27.0	29th 32.5	3.5	48—52	7—15	1st	0	0	0	2	0	5	19	3	213.4	3.62						
March ...	29.426	29.815	83.2	37.9	37.8	38.2	40.2	72.2	51.4	50.0	8th 26.0	20th 29.8	3.4	85—37	8—50	28th	3	5	3	3	4	3	8	2	195.4	3.13						
April	29.634	29.982	78.3	41.4	41.2	42.2	42.2	80.0	60.2	58.0	17th 24.0	24th 31.3	4.0	115—33	10—20	17th	3	10	3	2	2	2	4	4	184.9	2.14						
May	29.618	29.967	73.5	52.6	52.8	50.8	46.9	101.08	72.9	75.0	28th 40.0	22nd 42.2	3.5	185—25	13	40th	0	2	3	3	5	6	9	3	181.5	2.87						
June ...	29.735	30.083	75.2	54.7	56.4	56.4	52.1	103.3	76.4	75.0	3rd 41.0	21st 43.7	3.6	188—35	14—15	30th	2	4	6	1	1	3	8	5	149.8	2.08						
July	29.666	29.999	77.2	58.0	58.6	59.01	55.5	105.3	78.5	82.0	2nd 44.0	8th 43.7	7.5	178—40	14—5	1st	3	3	2	2	2	10	8	1	132.0	4.33						
August ...	29.668	29.984	80.6	56.5	56.06	57.4	56.07	103.6	75.5	71.0	2nd 41.0	12th 41.2	7.6	163—22	12—10	16th	1	3	4	2	1	7	13	0	156.3	4.07						
September	29.544	29.923	82.9	53.7	51.5	53.7	53.8	91.1	69.2	75.0	30th 36.0	12th 43.05	4.8	80—58	11	35th	2	4	4	1	7	8	4	0	171.4	4.67						
October ..	29.754	30.118	85.8	53.1	52.7	52.9	53.4	82.0	65.7	76.5	3rd 35.0	25th 42.3	5.8	114—45	8—20	12th	1	4	5	11	7	1	2	0	141.6	1.52						
November	29.615	30.007	87.5	44.1	43.5	45.5	48.7	63.08	51.7	56.0	1st 28.5	8th 33.6	5.9	47—40	6	50th	1	3	6	2	2	9	7	0	180.6	4.09						
December	29.463	29.859	92.8	38.05	37.8	40.9	44.9	50.3	44.08	51.0	20th 16.5	30th 29.6	4.4	22—50	5—0	11th	0	1	5	6	9	6	4	0	170.8	2.63						

TABLE LXXIX.—TOTAL AMOUNT OF BRIGHT SUNSHINE RECORDED ON EACH DAY DURING 1907.

MONTH.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total for each Month.
	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
January	0 0	0 0	0 35	4 0	0 0	0 0	0 0	0 0	0 0	0 0	2 0	0 0	3 0	0 0	1 5	0 0	0 0	4 0	0 0	0 0	0 40	0 35	2 20	0 0	0 0	5 0	0 0	0 0	3 0	7 0	5 30	32 45
February	0 0	3 0	4 30	0 0	6 0	1 15	5 20	0 0	3 0	1 10	6 30	0 0	6 55	0 0	1 10	4 30	1 50	0 7	0 0	0 20	6 30	8 20	7 32	0 0	0 0	0 0	7 30	5 0	.....	.....	.....	80 27
March	0 0	0 25	7 0	6 10	1 0	6 50	0 30	2 10	0 30	5 5	7 40	0 7	3 0	5 0	2 20	0 0	0 0	0 0	0 20	6 15	8 50	7 0	8 0	2 5	7 20	6 0	7 10	6 50	7 50	8 50	10 20	134 37
April	9 15	7 50	3 40	2 20	4 50	6 10	0 50	1 15	4 30	2 10	1 0	2 0	0 3	3 10	5 50	0 40	6 45	10 35	1 15	1 45	0 5	8 0	0 0	8 50	7 30	5 5	4 0	2 50	7 50	0 0	.....	119 53
May	9 20	5 15	4 30	1 10	7 50	10 0	0 0	11 15	5 30	0 0	0 40	2 15	1 15	0 0	2 0	4 40	9 15	7 30	0 30	7 0	6 30	8 15	0 0	1 50	2 30	2 10	5 15	0 0	12 0	0 0	0 0	128 25
June.....	0 0	0 3	2 10	0 0	2 0	1 45	0 35	0 45	6 0	6 10	7 0	4 50	2 30	0 14	0 15	9 30	9 0	0 12	3 0	0 10	3 0	10 0	6 10	0 0	5 30	0 30	9 50	7 0	2 45	3 12	.....	104 6
July.....	5 30	8 45	0 10	4 20	5 45	2 50	7 10	0 0	3 10	5 0	10 40	11 0	0 0	0 50	3 20	10 35	14 0	13 20	11 45	7 30	4 10	1 50	12 35	7 0	0 0	1 15	6 0	3 55	5 0	6 10	4 30	188 14
August	5 50	3 0	3 30	1 25	6 40	7 0	0 35	4 0	5 0	6 50	4 10	1 0	1 30	0 0	2 25	5 35	2 25	8 30	4 20	5 40	0 45	0 0	4 40	5 10	0 0	8 10	6 55	9 15	0 0	9 55	3 5	127 20
September	5 40	0 30	5 40	4 40	7 40	5 0	3 30	6 30	4 30	10 0	8 45	4 55	1 30	3 45	5 20	0 25	2 5	4 15	4 5	1 40	3 0	0 20	2 50	4 30	1 5	0 30	2 10	7 35	0 0	1 0	.....	114 10
October	1 40	5 45	6 10	8 10	0 0	0 20	8 0	4 10	5 0	3 15	5 10	0 0	3 50	0 5	0 20	5 30	0 0	0 0	5 50	2 15	6 35	3 0	2 50	6 45	1 0	0 0	0 0	0 40	0 0	0 0	0 0	87 5
November	5 0	0 50	0 10	0 0	0 0	4 20	0 30	0 0	1 20	3 40	0 0	5 20	2 50	0 0	7 25	0 0	0 0	4 30	0 0	0 0	0 15	0 0	0 15	0 25	3 50	0 0	1 40	0 0	6 0	3 30	.....	52 10
December	0 15	0 0	3 40	0 0	2 30	3 30	2 50	0 0	2 0	0 0	0 0	0 0	0 0	1 15	0 0	0 0	0 0	1 15	0 0	0 0	0 0	0 0	0 0	1 45	1 30	2 25	0 20	2 20	0 0	0 50	0 0	26 25

TABLE LXXX.—TOTAL AMOUNT OF BRIGHT SUNSHINE RECORDED ON EACH DAY DURING 1908.

MONTH.	1	2	3	4	5	6	7	8	9	10	11	12	13	14	15	16	17	18	19	20	21	22	23	24	25	26	27	28	29	30	31	Total for each Month.
	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m	h m
January	2 45	0 0	4 4	4 0	1 0	0 0	0 5	0 0	4 5	5 0	0 0	4 45	2 0	0 0	0 0	0 0	0 55	1 0	0 50	4 40	0 0	0 0	0 0	3 30	3 15	0 0	0 0	0 45	3 0	0 0	0 30	46 45
February.....	7 15	0 0	1 50	6 45	0 0	0 20	0 0	0 0	0 0	0 0	0 0	0 0	0 0	3 20	3 5	4 35	0 0	1 25	0 25	0 0	0 12	0 20	6 0	1 20	2 50	0 0	4 5	2 10	2 55	.....	.....	48 52
March.....	3 0	4 40	1 10	5 20	0 17	0 0	1 30	0 0	4 15	0 30	8 5	4 30	5 5	0 0	0 0	0 0	0 0	4 35	4 55	0 50	3 10	0 0	7 20	0 0	0 0	0 0	5 10	8 50	0 0	7 25	5 0	85 37
April	1 10	0 50	0 40	4 15	0 15	8 0	10 15	7 0	0 0	2 45	0 0	0 0	4 15	4 0	5 30	9 45	10 20	3 15	6 15	4 30	0 40	2 40	6 15	6 30	1 0	2 30	9 20	0 0	3 38	0 0	.....	115 33
May.....	9 45	7 10	0 0	1 40	1 40	3 10	11 45	0 0	9 40	12 35	6 0	8 0	7 40	3 50	2 0	2 45	6 0	0 50	0 0	12 30	5 0	3 0	12 30	5 15	2 10	1 15	13 40	13 30	11 10	12 15	8 40	185 25
June.....	0 25	0 50	7 30	6 30	11 5	9 20	1 20	1 20	0 35	3 50	1 0	11 20	0 0	7 30	5 40	11 10	0 0	4 30	3 20	7 20	14 10	12 40	1 5	0 40	12 30	6 50	9 10	12 10	10 30	14 15	.....	188 35
July.....	14 5	13 10	11 40	3 30	0 45	0 0	6 35	0 0	7 40	4 15	2 55	5 30	9 15	1 50	6 20	0 0	4 30	2 50	13 40	6 50	8 25	8 50	5 35	2 25	1 10	2 25	2 45	10 50	13 20	0 0	7 35	178 40
August	7 45	10 20	9 25	0 0	1 0	8 30	6 40	8 40	3 0	3 50	10 30	4 25	2 5	6 5	8 27	12 10	8 15	0 0	0 0	0 0	3 40	3 20	5 10	1 30	1 30	1 25	10 10	6 0	9 30	7 50	2 10	163 22
September	4 30	4 35	0 0	2 5	1 30	0 0	0 30	2 0	3 20	0 35	4 40	11 35	0 0	0 3	1 10	0 0	6 10	0 0	5 10	0 0	0 10	4 40	0 0	0 0	3 0	2 0	5 30	0 20	9 15	8 10	.....	80 58
October	7 40	6 5	8 0	4 0	6 30	2 15	4 50	0 0	1 10	5 15	2 0	8 20	6 15	2 0	2 20	0 15	0 0	0 40	0 0	0 0	4 0	3 30	0 0	6 0	6 50	0 0	0 20	3 50	2 30	6 20	3 50	114 45
November	0 0	0 35	2 0	3 30	0 0	0 0	1 0	6 50	2 30	1 40	0 0	6 30	2 50	1 50	0 0	0 0	2 0	0 0	4 55	0 0	0 10	0 25	6 30	0 0	0 15	0 0	0 0	0 0	4 10	0 0	.....	47 40
December	0 0	0 0	0 0	0 0	0 0	1 0	0 0	0 0	3 20	0 0	5 30	3 20	0 0	0 0	0 0	0 0	1 30	0 50	0 0	0 0	1 50	0 0	0 0	0 0	3 30	2 0	0 0	0 0	0 0	0 0	0 0	22 50

SUMMARY OF THE METEOROLOGICAL REPORT FOR 1908.

Mean monthly reading of the Barometer—29.983"

Highest daily reading of the Barometer—30.705"
on February 7th.

Lowest daily reading of the Barometer—28.872"
on December 10th.

Highest reading of the Maximum Thermometer—82°
on July 2nd.

Lowest reading of the Minimum Thermometer—16.5°
on December 30th.

Total rainfall during the year 38.88".

Number of days during the year on which rain fell—237.

The greatest number of days on which rain fell in one month—
25. in September.

The highest reading of the 4ft. Thermometer during the
year—56.8° on August 6th, 9th, 10th, 11th and 12th.

Number of days during the year without any bright sun-
shine—103 days.

SUMMARY OF WIND RECORDS.

Number of days in the year on which the prevailing wind
was—

N.	N.E.	E.	S.E.	S.	S.W.	W.	N.W.	Calm.
17	42	47	37	43	70	91	19	14

The total number of miles registered during the year
was—63,737.

The greatest number of miles registered during one day
was—559 on March 8th.

The least number of miles registered during one day
was—22 on December 2nd.

MEAT INSPECTION AND FARM INSPECTION.

Full details respecting the Inspection of Meat and Dairy Cattle will be found in the Report of the Veterinary Inspector, which follows my covering remarks.

The total number of carcasses destroyed shows a slight decrease of 3 carcasses when compared with the number destroyed during 1907.

The following are the figures of condemned carcasses for the last five years :—

Year.	1904	1905	1906	1907	1908
Carcasses of—					
Beef	215 ...	198 ...	166 ...	135 ...	91
Mutton	64 ...	66 ...	91 ...	68 ...	119
Veal	106 ...	90 ...	87 ...	61 ...	48
Pork	34 ...	24 ...	22 ...	38 ...	41
Goats	— ...	— ...	2 ...	— ...	
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>
Totals ...	419	378	368	302	299
	<hr/>	<hr/>	<hr/>	<hr/>	<hr/>

There was marked diminution in the number of carcasses of beef destroyed, and almost a corresponding increase in the number of carcasses of mutton destroyed. during 1908. as compared with 1907.

There has been a decrease in the number of animals slaughtered at the Public Abattoir, and in the number of carcasses and amount of meat brought to the Abattoir during 1908, as compared with 1907.

The animals which have been examined have been classified into cows, heifers, bulls, bullocks, calves, and pigs.

A total number of 12,698 of these six groups of animals were slaughtered during 1908, of which 411 were tuberculous, or a percentage of 3.2.

Similar percentages since 1902 have been as follows :—

1902	6.0
1903	5.1
1904	6.0
1905	5.8
1906	4.8
1907	4.3

This indicates a progressive diminution in the presence of tuberculosis amongst the animals slaughtered at the Blackburn Abattoir.

Tuberculosis was not present in any sheep out of a total number slaughtered of 34,953.

Of the above 411 tuberculous carcasses, 67, or 13.8 per cent., were rejected.

The percentage of tuberculous carcasses rejected during 1904, 1905, 1906, and 1907 were 22.1, 19.4, 19.0, and 15.7 respectively.

This also indicates that there has been a progressive diminution in the extent of disease amongst tuberculous animals at the Blackburn Abattoir during recent years.

Of the above 411 tuberculous carcasses examined, 291 were cows, or 70.8 per cent., compared with 69.5 per cent. in 1907. And of these 291 tuberculous cows, 43 or 14.8 per cent., were rejected compared with 14.9 per cent. in 1907.

It is interesting to note that 405 out of the 411 tuberculous animals had Tuberculosis of the Lungs. The serous membranes of the thoracic cavity were the next most commonly affected parts.

A similar order prevailed during previous years.

The Table showing the tuberculous udders at the Abattoir is again interesting. All these were examined microscopically at the Fever Hospital Laboratory.

The 16 tuberculous udders occurred in 2,470 cows, or .06 per cent.

Similar percentages since 1902 have been as follows :—

1902	.....	1.5
1903	.....	1.9
1904	.....	2.0
1905	.....	1.7
1906	.....	1.4
1907	.....	1.4

Therefore the diminution is very marked during 1908 when compared with previous years.

Six of these 16 cows with tuberculous udders were giving milk until the day of slaughter, and milk from two of the corresponding farms was being sold in Blackburn.

Regarding the extent of the tuberculous process in these 16 cows, 7 exhibited the disease so extensively that they were rejected.

As I have stated previously, closure of all the private slaughter-houses in the Borough, and extension at the Public Abattoir, would ensure the process of slaughtering being carried out under satisfactory conditions, and also a more complete inspection of carcasses.

I have also mentioned fully in previous reports the need for a cleaner milk supply.

Very important Milk Clauses which were inserted in the preliminary part of the Blackburn Corporation Bill of 1908, were struck out on account of the legislation promised on this matter by the Local Govern-

ment Board. It is to be hoped very sincerely that in the near future, Local Authorities will be provided with the required powers, which will tend to secure a purer and more wholesome milk supply than there is at present.

All will agree that this is one of the most important matters concerning the public health.

The following power was obtained in the Blackburn Corporation Act of 1908, with reference to milk supply :—

Section 72.

(1) Whenever it shall be certified to the Corporation by the Medical Officer of Health that the outbreak or spread of infectious disease is, in the opinion of such Medical Officer of Health, attributable to the milk supplied by any dairyman, the Corporation may require such dairyman to furnish to them, within a time to be fixed by them, a full and complete list of the names and addresses of all his customers within the Borough, and such dairyman shall furnish such list accordingly, and the Corporation shall pay to him for every such list the sum of sixpence and after the rate of sixpence for every twenty-five names contained therein, and every person who shall wilfully or knowingly offend against this enactment shall for every such offence be liable to a penalty not exceeding five pounds, and to a daily penalty not exceeding twenty shillings.

Section 73.

The provisions of Section 34 of the Contagious Diseases (Animals) Act, 1878, and of the Dairies, Cowsheds, and Milkshops Order, 1885, made thereunder, any of any other order made or to be made under the said section or relating to dairies, cowsheds, or milkshops, and of any regulations made or to be made by the Corporation under any such order for securing the cleanliness of milk vessels used for containing milk for sale shall apply to all vessels used within the Borough for the reception, measurement, storage, or delivery of milk by persons selling milk by retail.

A copy of the report on the bacteriological investigation conducted during 1907 into the Blackburn milk supply has been sent, specially, to the Local Government Board.

In the second interim Report of the Royal Commission on Tuberculosis, the following summary of the results which the Commission has arrived at, appear :—

There can be no doubt but that in a certain number of cases the tuberculosis occurring in the human subject, especially in children, is the direct result of the introduction into the human body of the bacillus of bovine tuberculosis ; and there also can be no doubt that in the majority at least of these cases the bacillus is introduced through cow's milk.

Cow's milk containing bovine tubercle bacilli is clearly a cause of tuberculosis, and of fatal tuberculosis in man.

A very considerable amount of disease and loss of life, especially among the young, must be attributed to the consumption of cow's milk containing tubercle bacilli. The presence of tubercle bacilli in cows' milk can be detected, though with some difficulty, if the proper means be adopted, and such milk ought never to be used as food. There is far less difficulty in recognising clinically, that a cow is distinctly suffering from tuberculosis, in which case she may be yielding tuberculous milk. The milk coming from such a cow ought not to be used as food at all.

Our results clearly point to the necessity of measures more stringent than those at present enforced being taken to prevent the sale or the consumption of such milk.

The main features of the third interim Report of the Royal Commission appointed to inquire into the relations of human and animal tuberculosis are contained in the passages quoted below :—

“ Tuberculosis involving the udder is comparatively common in cows, and in such cases their milk always contains tubercle bacilli and is, therefore, dangerous for human beings consuming it. It was, however, undecided what is the danger, if any, attaching to the milk of tuberculous cows in which the udder presents no evidence of disease. We therefore took the opportunity of making a number of observations and experiments bearing on this point. The experiments were made with the milk of cows which had contracted the disease in the natural way. In natural tuberculosis in the cow, cases which show such obvious symptoms of the disease as emaciation and cough should be considered separately from the cases in which there are no such signs and in which the disease is to be recognised during life only by means of the injection of tuberculin.

None of the cows investigated showed any sign of disease of the udder during life, and in all, after slaughtering, the udder was carefully examined for tuberculous lesions and tubercle bacilli. No tuberculosis was found, except in one case, in which one quarter of the udder showed four small nodules. These could not possibly have been detected during life. We found that the milk of the cows obviously suffering from tuberculosis contained tubercle bacilli whether the milk was obtained in the ordinary way or was withdrawn from the teat by means of a sterilized catheter.

The presence of tubercle bacilli in the milk of cows clinically recognisable as tuberculous confirms the opinion we expressed in our second interim Report that the milk of such cows must be considered dangerous for human beings. The experiments which we have carried out with regard to the infectivity of the fæces of tuberculous cows were dictated by knowledge of the fact that dirt of various kinds from cows and the cowshed is almost constantly present in milk as it reaches the consumer. Cows suffering from extensive tuberculosis of the lungs must discharge considerable numbers of bacilli from the air passages in the act of coughing, and some of the bacilli thus expelled may find

their way into the milk. But our experiments indicate that the excrement of cows obviously suffering from tuberculosis of the lungs or alimentary canal must be regarded as much more dangerous than the matter discharged from the mouth or nostrils. We have found that even in the case of cows with slight tuberculous lesions, tubercle bacilli in small numbers are discharged in the fæces, while, as regards cows clinically tuberculous, our experiments show that the fæces contain large numbers of living and virulent tubercle bacilli. The presence of tuberculous cows, in company with healthy cows in the cowshed, is therefore distinctly dangerous, as some of the tubercle bacilli which escape from their bodies in the excrement are almost certain to find their way into the milk."

The following circular letter was received from the Local Government Board during the year respecting the humane slaughtering of animals.

THE HUMANE SLAUGHTERING OF ANIMALS.

Local Government Board.

Whitehall, S.W.,

20th March, 1908.

Sir,

I am directed by the Local Government Board to state that they have recently had under consideration the question of the slaughtering of animals in slaughter-houses in connection with the Report of the Committee appointed by the Admiralty upon the subject of the Humane Slaughtering of Animals, and they think it may be desirable to draw the attention of the Council to the subject and especially to certain recommendations made by that Committee as to methods of slaughter. Under the terms of the reference the investigations by the Committee related to the following animals, viz., cattle, calves, sheep, lambs, and pigs.

The Committee suggested the universal enforcement of the following regulations :—

“(a) All animals, without exception, must be stunned, or otherwise rendered unconscious, before blood is drawn ;

(b) Animals awaiting slaughter must be so placed that they cannot see into the slaughter-house, and the doors of the latter must be kept closed whilst slaughtering is going on ;

(c) The drainage of the slaughter-house must be so arranged that no blood or other refuse can flow out within sight or smell of animals awaiting slaughter, and no such refuse shall be deposited in proximity to the waiting-pens ;

(d) If more animals than one are being slaughtered in one slaughter-house at the same time, they must not be within view of each other ;

(e) None but licensed men shall be employed in or about slaughter-houses.”

Many urban district councils, and some rural district councils possessing the necessary powers have, under the provisions of the Public Health Act, 1875, made a byelaw for preventing cruelty in slaughter-houses. This byelaw is usually based on one of the Board's Model Byelaws, which provides :—

Every occupier of a slaughter-house and every servant of such occupier and every other person employed upon the premises in the slaughtering of cattle shall, before proceeding to slaughter any bull, ox, cow, heifer, or steer, cause the head of such animal to be securely fastened so as to enable such animal to be felled with as little pain or suffering as practicable, and shall in the process of slaughtering any animal use such instruments and appliances and adopt such method of slaughtering and otherwise take such precautions as may be requisite to secure the infliction of as little pain or suffering as practicable.

Whilst this byelaw is intended to secure the humane slaughtering of animals, it does not require “stunning in all cases”

as recommended by the Committee. The Board think that byelaws requiring animals to be stunned before slaughter may be made both under the first paragraph of Section 169 of the Public Health Act, 1875, as regards slaughter-houses provided by a local authority, and under Section 128 of the Towns Improvement Clauses Act, 1847, as incorporated by the second paragraph of that Section, for the regulation of private slaughter-houses, and they are prepared to consider applications for the confirmation of such byelaws.

It must, however, be remembered that attempts at stunning, carelessly or unskilfully made, may be the means of inflicting, instead of avoiding, unnecessary pain, and hence the Board suggest that, before making a byelaw requiring the stunning of any animals other than horned cattle, the local authority should ascertain how far the butchers in the district are prepared to carry out the practice. In relation to this question the Board have been advised by the Board of Agriculture and Fisheries that they would see no objection to a byelaw requiring the stunning of pigs or calves, but that the stunning of sheep is a difficult operation, in the carrying out of which cruelty might easily occur. On the other hand the Admiralty Committee satisfied themselves that sheep can be stunned expeditiously and without difficulty, by striking them on the top of the head between the ears—not on the forehead—with a small club having a heavy head; and they state that in Denmark, many parts of Germany, and Switzerland, the law requires that sheep shall always be stunned previous to being stuck. But while the practice of stunning sheep may be a proper one to adopt in public abattoirs, where it will be carried out by skilled slaughtermen, the Board doubt whether it is advisable to require its adoption in private establishments unless there is reasonable ground for believing that it will be properly performed.

In some cases it may be necessary to include in such a series of byelaws a provision allowing the Jewish method of slaughter. The Board have recently confirmed the following byelaw for the Corporation of Liverpool :—

“ No person shall proceed to slaughter any bull, ox, cow, heifer, calf, or pig, until the same shall have been effectually stunned.

“ Provided that this requirement shall not be deemed to apply to any member of the Jewish faith, duly licensed by the Chief Rabbi as a Slaughterer, when engaged in the slaughtering of cattle intended for the food of Jews according to the Jewish method of slaughtering, if no unnecessary suffering is inflicted.”

In connection with the recommendations (*b*), (*c*) and (*d*), the Committee observe :—

“ The animals awaiting slaughter should be spared as far as possible from any contact with the sights or smells of the slaughter-house itself.

“ There is no point which the Committee have more carefully investigated than the question as to whether animals do or do not suffer fear from this contact, and the evidence of those best qualified to judge is so conflicting that no absolute verdict can be given. As an animal cannot speak, it is impossible to accurately determine to what extent it does or does not suffer from fear, but there is no doubt that cattle, especially, frequently show great reluctance to entering the slaughter-chamber, and can only be dragged in by the employment of considerable force. The presumption is that what they chiefly object to is the smell of blood, but whether this can be proved or not, it is obviously undesirable from a purely business standpoint to run any risk, as it appears to be an established fact that the flesh of an animal, killed whilst in a state of fear or excitement, loses some of its palatable and marketable qualities.

“ Apart from this, the question is of such vital importance from the standpoint of humanity that it seems clear that the animal should be given the full benefit of the doubt.

“ With this object in view, the waiting-pens should be separated from the slaughter-chamber, and the latter should be shut off by sliding doors.

“ It is also of great importance that the pitch of the floor, and the drainage of the slaughter-chamber, should be away from, and not run into, the waiting-pens, as is often the case at present. The common practice of depositing blood barrels, freshly-removed hides, or refuse from the slaughter house in close proximity to the waiting-pens should also be prohibited. . . . Cattle should, when possible, be slaughtered screened off from their fellows.”

When public slaughter-houses have been provided by a local authority under the powers contained in Section 169 of the Public Health Act, 1875, or similar powers in local Acts, the authority could probably in most cases give effect to the recommendations of the Committee just referred to. The local authority have direct control over the structure and arrangement of the slaughter-house, and they have power to make byelaws with respect to the management of the slaughter-house.

In the case of private slaughter-houses there is more difficulty in providing for these matters under the limited powers of control which may be derived from Section 128 of the Towns Improvement Clauses Act, 1847, as the Board do not think that it would be permissible to include in a byelaw framed for preventing cruelty, requirements directly affecting the structure of the premises. But if the local authority are of opinion that a clause or clauses on the subjects dealt with in paragraph (b), (c), and (d), can be enforced without infringing this principle, the Board would be willing to consider any proposal laid before them. They may say that they have in some recent cases allowed a byelaw prohibiting an occupier of a slaughter-house from causing or allowing any animal to be slaughtered, or its carcase to be dressed after slaughter, within the view of any other animal.

With respect to recommendation (e), the Board may state that there is no power in the general law enabling a local authority

to license slaughterers and to prohibit any person who has not a licence from slaughtering. The object of recommendation (e) cannot therefore be directly attained at the present time, but local authorities may be able to some extent to secure employment of properly qualified slaughterers, especially where they have the management of public slaughter-houses.

In a rural district, Sections 169 and 170 of the Public Health Act, 1875, and the amending provisions of the Public Health Acts Amendment Act, 1890, are not in operation unless they have been put in force by an Order of the Board.

The Board do not regard the first paragraph of Section 169 of the Public Health Act, 1875, which enables an authority to provide slaughter-houses, as generally suitable to a rural district. They are, however, willing to confer on a Rural District Council the powers contained in the rest of the Section in respect of any parishes in which slaughter-houses have been or are likely to be established.

The Board would recommend the Council to obtain a copy of the Report of the Committee if they have not already done so. The Council may have the opportunity, through their officers or otherwise, of bringing the recommendations of the Committee under the notice of persons engaged in the slaughtering of animals, with the result probably of improved methods of slaughter being adopted in premises where, at present, objectionable practices are in operation.

This Circular will be placed on sale, so that copies may shortly be obtained from Messrs. Wyman and Sons, Limited, Fetter Lane, E.C., either directly or through any bookseller.

I am, Sir,

Your obedient Servant,

S. B. PROVIS, Secretary.

VETERINARY INSPECTOR'S REPORT OF MEAT
INSPECTION AND INSPECTION OF DAIRY
CATTLE. Etc.

Public Health Office,

Blackburn,

February 15th. 1909.

To the Medical Officer of Health.

Sir,

I have pleasure in submitting to you my Report for the year 1908.

During that period, 945 diseased carcasses were examined at the Public Abattoir and Private Slaughter-Houses in the Borough. 290 of which were rejected and destroyed as unfit for human food. Nine immature carcasses of veal were also destroyed, making the total number of carcasses destroyed 299. Compared with last year, this return shows a decrease of two diseased carcasses and one immature calf.

During the year, 2,322lbs. of unsound meat, 951 rabbits, and a large quantity of fish were also destroyed. The total weight of the rejected carcasses, organs, meat, etc. (excluding fish), destroyed during the year was 35 tons 11 cwts. 1 qr.

There are at the present time 15 private slaughter-houses in the Borough where animals are slaughtered for sale as human food.

The following tables refer to the number of animals slaughtered at the Abattoir, the amount of dead meat brought to the Abattoir, the number of tuberculous carcasses and udders examined, the number of carcasses destroyed, and numerous other particulars relating to the inspection of meat and dairy cattle.

TABLE LXXXI.
NUMBER OF ANIMALS SLAUGHTERED AT THE
PUBLIC ABATTOIR

1908.	Beasts.	Sheep.	Goats	Calves.	Pigs.
January	648	3349	...	160	507
February	506	2841	...	199	453
March	481	1714	1	205	506
April	553	2280	3	344	322
May	521	2373	..	145	207
June	379	3071	...	121	90
July	441	4285	2	204	111
August	389	3103	..	126	97
September	554	3640	2	231	200
October	521	2793	..	191	250
November	507	2583	...	212	581
December.....	585	2921	...	144	1007
Totals.....	6085	34953	8	2282	4331

Compared with last year this table shows an increase of 927 Pigs and 1 Goat; also a decrease of 140 Beasts, 736 Sheep, and 188 Calves.

TABLE LXXXII.
NUMBER OF CARCASSES AND AMOUNT OF MEAT
BROUGHT TO THE ABATTOIR.

1908.	CARCASSES.		BEEF.			PORK.
	Beef.	Mutton.	Hind Quarters.	Buttocks	Clods	Boxes.
January	59½	...	96	...	...	3
February ...	78½	...	56	...	...	8
March	74	442	60	...	...	2
April	48½	346	76	...	...	..
May	35½	261	100	4	...	...
June	34½	...	80	...	..	...
July	55	...	101	...	...	...
August	43½	...	63	...	..	...
September	86	...	79	...	..	...
October ...	33	..	82	...	2	..
November	54	...	60	4	9	12
December...	114½	...	63	...	1	12
Totals	716½	1049	916	8	12	37

Compared with last year this table shows an increase of 33 Boxes of Pork, and a decrease of 81½ Carcasses of Beef, 1,560 carcasses of Mutton, 262 hind quarters of Beef, and 18 clods of Beef.

TABLE LXXXIII.—TUBERCULOUS CARCASSES EXAMINED AND REJECTED.

	Cows.		Heifers.		Bulls		Bullocks.		Calves.		Sheep.		Pigs.		Totals.	
	Exam'd	Rejected	Exam'd	Rejected	Exam'd	Rejected	Exam'd	Rejected	Exam'd	Rejected	Exam'd	Rejected	Exam'd	Rejected	Exam'd	Rejected
1908.																
January	31	5	4	1	1	...	...	...	...	...	...	...	4	1	40	7
February	27	4	3	1	...	...	1	...	...	...	...	...	1	...	32	5
March	31	3	1	...	5	...	6	...	...	...	...	...	2	1	45	4
April	30	7	1	...	4	1	2	...	...	...	...	...	14	5	51	13
May	29	2	1	...	3	...	2	...	...	...	...	...	9	3	44	5
June	20	5	...	...	1	...	...	...	...	...	...	...	3	1	24	6
July	20	4	1	...	...	...	...	...	...	...	...	...	5	2	26	6
August	15	2	...	...	2	...	...	...	...	...	...	...	2	...	19	2
September	15	1	3	1	3	...	1	1	...	...	...	...	10	3	32	6
October	23	5	5	...	1	...	1	...	...	...	...	...	2	...	32	5
November	27	2	3	1	...	...	1	...	...	...	...	...	2	1	33	4
December	23	3	3	...	1	...	1	...	...	...	...	...	5	1	33	4
Totals... ..	291	43	25	4	21	1	15	1	...	...	...	...	59	18	411	67

TABLE LXXXIV.—Tuberculous Cows exhibiting Tuberculous Disease in the Mammary Glands

1908	No. of Cow	Age.	Where From.	Extent of the Tuberculous Process.			Was she giving milk on the day of slaughter.	Was Milk from the farm sold in Blackburn.	Result of examination of the Carcase.
				Generalized	Localized	Udder.			
Jan. 6	1	aged	Salford	No	Yes	Both posterior quarters	No	No	passed
Feb. 24	2	aged	Liverpool	No	Yes	Right anterior and posterior quarters	No	No	passed
April 21	3	aged	Liverpool	No	Yes	Left anterior and posterior quarters	No	No	passed
" 21	4	aged	Wylpsh re	No	Yes	Left posterior quarter	Yes	Yes	passed
May 13	5	aged	Standish ..	No	Yes	Left anterior and posterior quarters	No	No	passed
" 28	6	aged	Edinburgh	No	Yes	Right posterior quarter	Yes	No	passed
July 16	7	aged	Edinburgh	No	Yes	Left posterior quarter ..	Yes	No	passed
" 31	8	aged	Clitheroe	Yes	No	Both posterior quarters	No	No	rejected
Aug. 5	9	aged	Preston	No	Yes	Right anterior and posterior quarters	Yes	No	passed
" 18	10	aged	Rimmington	Yes	No	Left posterior quarter ..	Yes	No	rejected
" 31	11	aged	Mellor	Yes	No	Every quarter	No	No	rejected
Oct. 22	12	aged	Townley	Yes	No	Left anterior and posterior quarters	No	No	rejected
" 29	13	aged	Whalley	Yes	No	Every quarter	No	No	rejected
Nov. 16	14	aged	Preston	No	Yes	Right anterior and posterior quarters	No	No	passed
" 25	15	heifer 1½ yrs.	Liverpool	Yes	No	Left posterior quarter	No	No	rejected
Dec. 15	16	aged	*Wilton	Yes	No	Left posterior quarter	Yes	Yes	rejected

The Cow marked * was from a Cowshed within the Borough.

TABLE LXXXVI.

DISEASED CARCASSES EXAMINED, REJECTED, AND
DESTROYED FOR DISEASES, etc. OTHER THAN
TUBERCULOSIS.

CARCASSES.

BEEF.	MUTTON.	VEAL	PORK.	GOATS.
3 Arthritis	10 Anasarca	7 Arthritis	2 Arthritis	
2 Abnormal Colour, &c.	5 Anæmia	3 Abnormal colour, &c.	2 Cirrhosis of Liver and Jaundice	
1 Anasarca	1 Arthritis	3 Congested, ill bled	2 Congested and ill-bled	
1 Chronic Nephritis	16 Congested and ill-bled	7 Emaciated	3 Conditions. &c. incidental to difficult parturition	
1 Enteritis	2 Conditions, &c. incidental to difficult parturition	1 Icterus	1 Fractured Bones, &c.	
1 Extravasation of Blood, the result of ruptured blood vessels	25 Emaciated	2 Nephritis	1 Hepatitis	
1 Emaciation	1 Extensively Bruised	1 Purpura	1 Nephritis	
1 Fractured Bones, &c.	1 Internal Hæmorrhage	1 Pyæmia	1 Pyæmia	
2 Gastritis and Enteritis	1 Lipomatous Tumours of Liver	12 Unmarket- able, &c.	1 Pneumonia	
3 Pneumonia	25 Parasitic Diseases of lungs and liver		4 Rachitis	
5 Rheumatism	1 Pneumonia		1 Septicæmia	
2 Parturient Apoplexy	1 Pleurisy		3 Unmarketable &c.	
1 Putrid	1 Pyæmia		1 Urticaria	
4 Staggers	10 Suffocated			
2 Suffocated	1 Tympanitis			
2 Septicæmia	18 Unmarket- able			
6 Septic Metritis				
1 Septic Pneumonia				
1 Symptomatic Anthrax				
1 Traumatic Peritonitis				
1 Unmarketable, &c.				
Totals 42	119	39	23	

Total Number of Carcases Destroyed.

Kind of Carcase—1908.

Beef.....91—including 49 tuberculous and 1 symptomatic anthrax.

Mutton.....119.

Veal.....48—including 9 immature.

Pork.....41—including 18 tuberculous.

Total.....299 carcases.

DISEASED ORGANS, &c. REJECTED & DESTROYED.

1908	Heads.	Sets of Lungs.	Hearts.	Diaphragms.	Livers.	Stomachs.	Spleens.	Kidneys.	Udders
For Tuberculosis.	10	336	4	11	140	1	3	81	16
For diseases other than Tuberculosis	2	49	25	5	257	7	4	10	22
Totals...	12	385	29	16	397	8	7	91	83

DISEASED TISSUES, ETC., FORWARDED TO THE FEVER HOSPITAL LABORATORY FOR EXAMINATION.

<i>Material.</i>	<i>Positive. Negative. Total</i>		
Sections of cows' udders for tubercle bacilli	12	4	16
Blood for anthrax bacilli	0	2	2
Crust for ringworm.. ..	1	0	1
Totals	13	6	19

DISEASED, BRUISED, PUTRID, AND UNMARKETABLE MEAT
REJECTED AND DESTROYED APART FROM WHOLE CARCASSES.

1908.	Beef, Mutton, Pork and Veal.					lbs.
January	156
February	16
March	400
April	146
May	210
June	84
July	157
August	449
September	243
October	200
November	12
December	249
Total ...						2,322

FISH, RABBITS, GAME, AND POULTRY, EXAMINED, REJECTED,
AND DESTROYED.

1908	Fish						Rabbits	Hams.
	Boxes.	Barrels	Bags	Kits	Lbs	Quarts		
Totals	307 $\frac{1}{2}$	11	47	...	358	...	951	9

NUMBER OF ANIMALS INSPECTED IN PRIVATE
SLAUGHTER-HOUSES.

Beasts.	Sheep.	Calves.	Pigs.
2129	9408	637	19

WEIGHT OF REJECTED CARCASSES, ORGANS, MEAT, &c.,
FORWARDED FOR DESTRUCTION DURING THE YEAR
FROM THE ABATTOIR TO AUDLEY DESTRUCTOR.

1908.		Tons.		Cwts.		Qrs
January	...	3	...	10	...	1
February	...	3	...	6	...	0
March	...	2	...	7	...	1
April	...	3	...	15	...	2
May	...	3	...	15	...	2
June	...	2	...	7	...	3
July	...	1	...	16	...	0
August	...	1	...	19	...	2
September	...	2	...	11	...	2
October	...	5	...	8	...	1
November	...	2	...	3	...	3
December	...	2	...	10	...	0
Totals	...	35		11		1

The above figures do not include the weight of Fish destroyed.

NUMBER OF VISITS.

To Butcher's Shops, etc.	1,067
To Private Slaughter-houses ..	1,857
To the Meat Market.....	512
To the Fish Market	746
To the Public Abattoir	610
To the Railway Station.....	396

Total.... 5,188 visits.

CARCASSES OF PORK BROUGHT DIRECT TO SHOPS.

At the present time a large number of country and town-fed pigs are being slaughtered at the farms and are delivered direct to the butchers and grocers' shops in the Borough. Considering the prevalence of tuberculosis in town and country-fed pigs, and the impossibility of adequate inspection of every carcass, there is a grave risk that at times tuberculous pork may be sold for human food. There is no doubt that many farmers prefer to slaughter their pigs at home rather than bring them to the Abattoir where there is an efficient method of meat inspection. I would suggest that a letter be sent by you to the wholesale pork butchers and others who are in the habit of having pigs brought to their shops, warning them of the risk they run should the inspectors find tuberculous pork exposed for sale as human food on their premises.

ANTHRAX.

No cases of Anthrax were found at the Abattoir or Private Slaughter-Houses during the year.

The following figures show the cases of Anthrax discovered and reported in Blackburn during previous years:—

	1900	1901	1902	1903	1904	1905	1906	1907	1908
Blackburn cases	1	1	1	5	1	1	2	3	0
Outside cases ... (introduced)	4	4	3	3	8	4	3	9	0
Totals	5	5	4	8	9	5	5	12	0

FARM AND DAIRY CATTLE INSPECTION.

During the year I visited 52 Farms, inspected 96 Cowsheds, and examined the mammary glands of 1,142 dairy cows.

I certified that two of the cows examined were suffering from tuberculosis of their mammary glands, and the sale of their milk was immediately prohibited by you.

Tuberculous Cows Exhibiting Mammary Tuberculosis.

No. of Cow.	Date of Certificate, 1908.	Situation of Farm in Blackburn.	Extent of Tuberculous Process in Cow's Udder.	Remarks.
1	Mar. 25	Fernhurst	Right posterior quarter tuberculous	Sold Destination unknown
2	Dec. 23	Guide	Right posterior quarter tuberculous	Sold Destination unknown

It will be seen that the two cows suffering from Tuberculosis of their Mammary Glands were removed from Blackburn and their destination unknown.

I found two cows suffering from Mammitis and other abnormal conditions of their udders. The milk of these two cows was not sold for human food.

I found three cows showing clinical symptoms of Tuberculosis, and requested their removal from the cowsheds and advised their immediate slaughter. These measures were carried out.

In one cowshed I found a bull suffering from Ringworm, and I ordered the animal to be removed and isolated immediately.

Of the 291 tuberculous cows slaughtered at the Abattoir, 13 were brought from farms in the Borough and 6 from the Blackburn Cattle Market. The others were brought from Liverpool, Annan, Preston, Salford, Edinburgh, Clitheroe, and farms in the surrounding districts.

TUBERCULOUS UDDERS.

Your letter of September 24th to farmers in Blackburn, requiring them to notify to you every case, or suspected case, of tuberculosis in their dairy cows has not been complied with in a satisfactory manner.

Neither of the two cases of Udder Tuberculosis discovered in Dairy Cows in Blackburn cowsheds was notified to you by their owners, but were detected at farms by me during visits of inspection. Both of these cases should have been notified to you by their owners, as required by the Blackburn Corporation Act, 1901, and the sale of their milk as human food would have been prevented much earlier.

BACTERIOLOGICAL EXAMINATION OF MILK FOR TUBERCLE
BACILLI.

During the year, 22 Samples of Milk were collected and forwarded to Professor Delépine for bacteriological examination for tubercle bacilli. The 22 samples examined for tubercle bacilli were obtained as follows :—One unmixed sample obtained direct from a cow with an abnormal udder ; 4 mixed samples obtained direct from cows in the cowsheds, and the remaining 17 were collected by other inspectors from carts in the street.

The following tables show the results obtained :—

UNMIXED SAMPLE OF MILK SUBMITTED FOR BACTERIOLOGICAL
EXAMINATION.

Number of Sample.	Date of Collection	Number of Can	Evidence of Disease in Cow's Udder.	Result of Examination.
1	April 8	B 40	Right posterior quarter indurated.	Negative. Found not to cause tuberculosis.

MIXED SAMPLES OF MILK SUBMITTED FOR BACTERIOLOGICAL
EXAMINATION.

Number of Sample.	Date of Collection	Number of Can.	Number of Cows.	Result of Examination.
1	Mar. 6	B 38	23	Negative. Found not to cause tuberculosis.
2	Oct. 15	B 40	23	Do.
3	Dec. 23	B 39	51	Do.
4	Dec. 23	B 36	17	Do.

Samples 1 and 2 were from cows supplying the Fever Hospital, and free from tubercle bacilli, as were all the others.

TABLE LXXXVII.

SAMPLES OF MIXED MILK COLLECTED FROM MILK CARTS
IN THE STREETS OF BLACKBURN FROM FARMERS BRINGING
MILK INTO THE BOROUGH.

Number of Sample.	Date of Collection	Number of Can.	Number of Cows.	Result of Examination.	
1	Mar. 9	B 36	14	Negative. Found <i>not</i> to cause Tuberculosis.	
2	„ 9	B 37	30	Do.	do.
3	„ 9	B 39	18	Do.	do.
4	„ 9	B 40	30	Do.	do.
*5	Oct. 23	B 40	15	Do.	do.
6	Dec. 2	15	25	Do.	do.
7	„ 2	33	14	Do.	do.
8	„ 2	20	32	Do.	do.
9	„ 2	11	28	Do.	do.
10	„ 3	19	13	Do.	do.
11	„ 3	45	5	Do.	do.
12	„ 3	3	10	Do.	do.
13	„ 3	21	30	Do.	do.
14	„ 11	1	8	Do.	do.
15	„ 11	11	14	Do.	do.
16	„ 11	18	28	Do.	do.
17	„ 11	39	15	Do.	do.

The above table shows that 17 samples were collected, representing the milk of 329 cows. All the samples were negative. The sample marked * was from cows supplying the Blackburn Infirmary.

COWSHED INSPECTION.

The usual circular letter sent by you on September 24th to all Cowkeepers in the Borough, requiring the limewashing of cowsheds, has again been responded to in a satisfactory manner. Several farmers still continue to use dusty shoddy as a bedding for their cows, although I have pointed out to them that its use for such a purpose must contaminate the milk.

During the year I inspected 96 cowsheds, and found that the majority of them were kept in a cleanly condition.

On December 23rd I inspected the cowsheds, etc., at a farm in Blackburn, and found the cowsheds and cows therein were kept in a filthy condition. I warned the farmer that legal proceedings would be taken against him if he did not in future keep his cowsheds, etc., clean.

It is important that dairy cows should be kept clean, as it is impossible to obtain clean and pure milk if the cows' hind-quarters, udders, and tails are dirty with excreta.

During the coming year it is my intention to visit the farms frequently and insist upon greater cleanliness of the cows, cowsheds, yards, etc. I would also like to state that in my opinion the excreta is not removed sufficiently often from the middensteads at the majority of the farms in the Borough. I am of opinion that the accumulation of manure ought to be removed at least once a fortnight instead of once a month, as at present, as it is undesirable to store great quantities of decomposing organic material near cowsheds and dairies.

No new cowsheds have been erected during the year, but improvements in the lighting, ventilation, etc., of some of the existing cowsheds have been made.

I am, Sir,

Your obedient Servant,

JAMES ROGERSON HAYHURST,
M.R.C.V.S.,

Veterinary and Chief Meat Inspector.

REPORT OF INSPECTOR OF NUISANCES.

Public Health Office,

53, Northgate,

Blackburn.

TO THE MEDICAL OFFICER OF HEALTH.

Dear Sir,

I beg to submit to you the following Report of the Sanitary Work carried out during the year 1908.

INHABITED VANS.

I am glad to report that there has been a great decrease in the number of the itinerant van-dwellers, and I hope by strict enforcement of a proper temporary closet accommodation and water supply to keep this tribe away. The usual van-dwellers during the Fair week, on the Market Ground, and on the Wrangling have again been with us. They have been inspected and kept under observation during their short stay. The same measures have been adopted as during 1907 for the removal of the refuse. The insides and surroundings have been kept clean, and they have been free from any infectious disease.

CANAL BOAT ACTS, 1887 & 1884.

In compliance with the Acts and Regulations, 189 canal boat inspections have been made during the year as compared with 202 in 1907, with the view of ascertaining whether such regulations were being carried out or not.

Ten infringements of the Acts have come under notice, namely :—

Three masters without certificates.

Two boats in a leaky condition.

Three boats dirty, from want of cleaning.

Two boats in want of painting.

Five notices have been served, notifying the owners of the infringements of the various clauses of the Local Government Board Regulations, and all the notices have been complied with, the certificates having been received or the boat re-inspected.

Three masters were cautioned for dirty boats, and two for leaving their certificates at home.

No infectious disease has been met with on these boats, and no detention of boats for cleansing or disinfection has been necessary. There are 110 boats on the Register. Three new boats have been registered and two boats have been re-registered through change of owners.

As occupants, the 189 boats included 351 males, 78 females, and 28 children. Twenty-five of the children were under school age, and three over school age, who were on a trip during the school holidays.

Table LXXXVIII. —INSPECTION OF FOOD AND DRUG

Articles Analysed.	Number Analysed.	Result of Analysis.			Extent of Adulteration.	Result of Proceedings.
		Genuine	Adulterated	Doubtful		
Milk	156	142	14		$12\frac{1}{2}\%$ deficient in cream. 11% „ 7% „ $31\frac{2}{3}\%$ „ 17% „ $32\frac{1}{3}\%$ „ $6\frac{1}{3}\%$ „ 4% „ $9\frac{2}{3}\%$ „ 5% „ $6\frac{2}{3}\%$ „ $2\frac{1}{3}\%$ „ $1\frac{3}{4}$ grains boracic acid per pint Slightly watered. $1\cdot05\%$ boracic preservative.	Fined £2 & costs Warned by letter. Fined £10 and costs. 3rd offence Fined £1 Fined 40s. & costs Warned by letter. Do. Case dismissed. Warned by letter Do. Do. Do. Do.
Butter	48	47	1		$1\cdot05\%$ boracic preservative.	Informal sample; formal sample obtained and proved genuine.
Coffee	20	20				
Lard ...	12	12				
Pepper ...	11	11				
Beer.....	9	9				
Picked Shrimps.	6		6		$0\cdot3\%$ boracic acid. $1\cdot0\%$ „ $0\cdot5\%$ „ $0\cdot85\%$ „ $0\cdot75\%$ „ $0\cdot6\%$ „	Informal samples Do. Withdrawn on pay- ment of costs. Fined 20/- & costs „ 20/- & costs „ 10/- & costs
Potted Lobster..	2		2		60% of foreign fish. 55% „	Fined £5 & costs Do.
Tea	5	5				
Carried forward	269	246	23	...		

COMMON LODGING-HOUSES.

In accordance with the Blackburn Improvement Act of 1901, the annual certificates of registration of the premises and the keepers of 20 of the houses have been renewed. The renewal of the certificate of registration of the premises numbered 66, Moor-street, as a Common Lodging House for a period of 12 months, and of the registration of keeper and deputy was deferred until a fire-escape and other repairs had been attended to. Part of this work has been carried out in accordance with your suggestions, and a renewal of certificate of registration will again be applied for. One new certificate of registration of the premises, 3, Syke-street, which has good accommodation for 44 males, has been granted. Also accommodation is being provided at this house for 20 more males. The sanitary requirements, to keep this class of house in a good state, have not been carried out at 26 and 28, Penny-street, 54, Syke-street, and 7, Albion-yard. Better closet and lavatory accommodation and good flagged surfaces of the yards are necessary to bring these three houses up to the standard of efficiency.

The present number of houses on the register is 21, accommodating 861 adults and 20 children, but if the house in Moor-street should be altered in accordance with the requirements, the number would be increased by 93, making a total of 954.

One thousand and twenty-four visits have been paid to these houses during the year. Cleanliness and good order have again been well maintained. No infectious disease has been reported or discovered in these premises during the year.

The following is a list of the Common Lodging Houses in the Borough :—

<i>Situation of Premises.</i>	<i>No. of Rooms.</i>	<i>No. Registered for.</i>
19 Larkhill Street.....	41	320 adults
66 Moor Street	20	93 „ and 6 children
6 and 8 Mount Pleasant.....	8	65 „
3 Syke Street	6	44 „
7 and 9 Daisy Street	2	37 „
56 Chapel Street	7	37 „
104 Mary Ann Street	5	37 „ „ 1 child
74 and 76 Chapel Street	5	36 „
26 and 28 Penny Street	10	33 „ „ 9 children
86 to 92 Chapel Street	7	35 „ „ 1 child
54 Syke Street	6	32 „
33 Joiners Row.....	4	25 „
59 Water Street	5	25 „ „ 2 children
30 and 32 Leyland Street.....	4	20 „
13 Grimshaw Park	3	18 „
8 Cowell Street	2	16 „
33 Larkhill Street	3	16 „ „ 1 child
7 Albion Yard	3	16 „
26 Bradshaw Street.....	3	18 „
83 Moor Street	3	11 „
47 Nab Lane	2	8 „
49 „ „	2	12 „

HOUSES LET IN LODGINGS.

These houses, I am glad to report, have not increased during the year. There are still 60 on the register, containing 183 rooms and accommodating 416 adults and 72 children. They have been regularly inspected, 2,594 visits having been paid to them, and their cleanliness has again been well maintained. Only one infectious disease has occurred, namely, a case of Scarlet Fever. The patient was immediately removed to hospital, and the house washed down with disinfectants.

COMPLAINTS FROM THE PUBLIC.

Three hundred and fourteen complaints from the public have been received during the year, and 447 visits have been made for the purpose of fully inquiring into the cause. In many instances it has been necessary to test the drains of the house. The complaints have been promptly investigated and the necessary action taken for their abatement.

SMOKE OBSERVATIONS OF FACTORIES.

Two hundred and fifty-three observations of one hour's duration have been made of the various chimneys in the town. Twenty have exceeded the time limit. Twenty-two notices have been served to abate the excess of smoke, and in every case improvements have been carried out. There has therefore been no necessity for legal proceedings during the year 1908.

TABLE LXXXIX.—SMOKE OBSERVATIONS.

Name of Mill.	Result of Observation			No. of Boilers.	If Stokers.	Action taken.
	B.	F.	N.			
Atlantic 1.....	1	17	42	1	No	
„ 2.....	0	4	56	..	..
„ 3.....	0	10	50	..	..
Albert (H.S.) 1.....	1	10	49	2	No	
„ 2.....	3	17	40	..	..
„ 3.....	4	5	51	..	..
Albert (Waterfall) 1...	2	26	32	1	Yes	
„ 2..	0	25	35	..	..
Albert (G.S.W.) 1... .	$\frac{1}{2}$	29 $\frac{1}{2}$	30	1	Yes	
„ 2.....	2	34	24	..	..
Albert 1.....	5	22	33	2	No	
„ 2.....	1 $\frac{1}{2}$	25 $\frac{1}{2}$	33	..	..
„ 3.....	4	24	32	..	..
„ 4.....	2 $\frac{1}{2}$	12 $\frac{1}{2}$	45	..	..
Aqueduct (H.W.)	1	32	27	1	No	
Armenia 1.....	1	4	55	1	No	
„ 2.....	0	6	54	..	..
Alexandra 1.....	$\frac{1}{2}$	19 $\frac{1}{2}$	40	1	Yes	
„ 2.....	2	23	35	..	..
Alma 1.....	3	22	35	1	No	
„ 2.....	3 $\frac{1}{2}$	18 $\frac{1}{2}$	38	..	..
Audley Hall No. 1.....	...	32	28	2	Yes	
Audley Bridge 1.....	3 $\frac{1}{2}$	14 $\frac{1}{2}$	42	1	No	
„ 2.....	1 $\frac{1}{2}$	10 $\frac{1}{2}$	48	1	..	
Audley Range	9	23	28	1	No	Notice served.
Audley Range (N.M.) 1	10	15	35	1	Yes	Notice served.
„ „ 2	3 $\frac{1}{2}$	12 $\frac{1}{2}$	44	..	..
Audley Hall No. 2... .	...	34	26	2	Yes	
Albert (L.) 1.....	...	25	35	1	Yes	
„ 2.....	2	26	32	..	..
Albert Street (T.W.)...	1	28	31	1	No	
Audley Range (B.W.) 1	1 $\frac{1}{2}$	12 $\frac{1}{2}$	46	1	No	
„ „ 2	1 $\frac{1}{2}$	19 $\frac{1}{2}$	39	..	..
Britannia... ..	0	7	53	1	Yes	
Bankfield 1.....	0	37	23	2	Yes	
„ 2.....	3	37	20	..	..
„ 3.....	0	19	41	..	..
„ 4.....	2 $\frac{1}{2}$	51 $\frac{1}{2}$	6	..	..
Bastfield 1.....	9	37 $\frac{1}{2}$	13 $\frac{1}{2}$	2	Yes	Notice served.
„ 2.....	1 $\frac{1}{2}$	32 $\frac{1}{2}$	26	..	..
Bridgewater 1.....	3 $\frac{1}{2}$	25 $\frac{1}{2}$	31	2	No	

SMOKE OBSERVATIONS continued.

Name of Mill.	Result of Observation			No. of Boilers	If Stokers.	Action taken.
	B.	F.	N.			
Bridgewater 2	3	14	43	2	No	Notice served
Bastwell (D.W.) 1 ...	0	33	27	1	No	
„ 2 ..	11	13	36	...	...
„ 3 ..	3 $\frac{1}{2}$	24	32 $\frac{1}{2}$	...	...
Bright Street 1	1 $\frac{1}{2}$	19 $\frac{1}{2}$	39	1	No	Notice served
„ 2	1	24	35	...	...
Burmah	0	29	31	1	No	
Bank Top	0	37	23	1	Yes	
Blackburn (B)	1	18	41	1	No	Notice served
Bridge 1	9 $\frac{1}{2}$	36 $\frac{1}{2}$	14	1	No	
„ 2	1 $\frac{1}{2}$	32 $\frac{1}{2}$	26	...	...
„ 3	3	31	26	...	...
Belper St. Baths	0	29	31	1	Yes	Notice served
Belle Vue	0	36	24	1	No	
Brookhouse 1	$\frac{1}{2}$	9 $\frac{1}{2}$	50	6	No	
„ 2	0	24	36	...	...
Bank Top (F)	0	35	25	1	No	Notice served
Brick Works 1	2	22	36	1	No	
„ 2	1 $\frac{1}{2}$	19 $\frac{1}{2}$	39	...	...
Crossfield	1	27	32	2	No	
Commercial	0	22	38	1	No	Notice served
Columbia 1	0	5	55	1	No	
„ 2	1	6	53	...	...
Chadwick Street	4	35	21	1	Yes	
Canton 1	2 $\frac{1}{2}$	10 $\frac{1}{2}$	47	2	No	Notice served
„ 2	3	14	43	...	...
Cicely Bridge 1 ...	3	18	39	3	No	
„ 2	3 $\frac{1}{2}$	13 $\frac{1}{2}$	43	...	...
Corn Mill (D.S.) 1	0	17	43	1	Yes	Notice served
„ 2	$\frac{1}{2}$	9 $\frac{1}{2}$	50	...	...
Crystal Spring (1 W.) ...	...	36 $\frac{1}{2}$	23 $\frac{1}{2}$	1	No
Cobden Street .....	...	40	20	1	No
Chemical Works	2	19	39	1	No	Notice served
Carr Cottage .....	...	18	42	1	No
Copy Nook (T.W) ...	$\frac{1}{2}$	20 $\frac{1}{2}$	39	1	No	
Canal Foundry 1	$\frac{1}{2}$	31	28 $\frac{1}{2}$	1	No	
„ 2	1	25	34	Notice served
„ 3	2	18	40	...	...
Cardwell 1	0	32	28	3	Yes	
„ 2	1	25	34	...	...
„ 3	0	30	30	...	...

SMOKE OBSERVATIONS—continued.

Name of Mill.	Result of Observation			No. of Boilers.	If Stokers	Action taken.
	B.	F.	N.			
Duke Street	0	13	47	1	Yes	
Dewhurst St. 1.....	4	18	38	1	No	
„ 2.....	3	19	38	...	...
„ 3.....	4½	29½	26	...	...	Notice served
„ 4.....	3	23	34	...	...
Duxbury Street.....	..	27	33	5	Yes	
Daisy Street 1.....	...	25	35	2	No	
„ 2.....	1½	31½	27	...	...
„ 3.....	½	19½	40	...	...
Daisyfield (S.M.) 1.....	...	32	28	1	No	
„ „ 2.....	½	21½	38	...	...
Daisyfield (C.M.) 1.....	...	42	18	2	No	
„ „ 2.....	...	28	32	...	...
Dock Street.....	1½	15½	43	1	No	
Duckworth Field 1.....	...	26	34	1	Yes	
„ „ 2.....	1	28	31	...	...
Ewood 1.....	20	4	36	1	Yes	Notice served
„ 2.....	0	33	27	...	...
Eanam Bridge 1.....	5½	21½	33	1	No	Notice served
„ 2.....	1	38	21	...	...
„ 3.....	1	20	39	...	...
Eanam 1.....	13½	26½	20	3	No	Notice served
„ 2.....	...	24½	35½	...	...
Fountain 1.....	1½	14½	44	1	No	
„ 2.....	½	17½	42	...	...
Furthergate	3½	21½	35	3	No	
Fisher Street 1.....	..	52	8	1	Yes	
„ 2.....	..	47	13	...	...
Florence 1.....	..	25½	34½	1	No	
„ 2.....	2½	31½	26	...	...
Fisher Street (S.W.)...	½	13½	46	1	No	
George Street West 1.....	..	8	52	1	No	
„ „ 2.....	5	8	47	...	...	Notice served
„ „ 3.....	0	4	56	...	...
George St West (T.W.) 2.....	2	6	52	1	No	
Greenlow.....	..	..	60	1	Yes	
Gorse Bridge 1.....	2	37	21	1	No	
„ 2.....	7	34	19	...	...	Notice served
„ 3.....	1½	15½	43	...	...
Greenbank (I.W.) 1.....	4	54	2	1	No	
„ „ 2.....	...	38	22	...	...

SMOKE OBSERVATIONS—Continued.

Name of Mill.	Result of Observation			No of Boilers.	If Stokers.	Action taken.
	B.	F.	N.			
Greaves Street	0	20	40	1	No	Improvements made Notice served
Garden Street	0	39	21	2	Yes	
Highfield	14	4 $\frac{1}{2}$	41 $\frac{1}{2}$	2	No	
Harley Street 1.....	7	27	26	1	Yes	
„ 2.....	0	9	51	Improvements made Notice served
„ 3.....	1	7	52	...	...
Holehouse	3	18	39	1	No	
Hollinshead	0	52	8	1	Yes	
Higher Audley Street 1	1 $\frac{1}{2}$	18 $\frac{1}{2}$	40	1	Yes	Improvements made Notice served
„ „ 2	0	15	45	...	...
Havelock 1.....	0	33	27	1	No	
„ 2	2	30	28	...	...
„ 3.....	4	35	21	Improvements made Notice served
Hollin Bank (No. 1) 1	24 $\frac{1}{2}$	33 $\frac{1}{2}$	2	1	Yes	
„ 2	1	28	31	...	...
„ 3	0	24	36	...	...
Hollin Bank (No. 2) 1	0	20	40	3	Yes	Improvements made Notice served
„ „ 2	1	29	30	...	...
Infirmary 1.....	1	14	45	1	Yes	
„ 2.....	2	16	42	...	...
„ 3	3	12	45	Improvements made Notice served
Imperial 1.....	8	45 $\frac{1}{2}$	6 $\frac{1}{2}$	4	No	
„ 2.....	3 $\frac{1}{2}$	37 $\frac{1}{2}$	19	...	...
Jubilee 1	4	17	39	1	No	
„ 2.....	2	12	46	Improvements made Notice served
„ 3	3 $\frac{1}{2}$	15 $\frac{1}{2}$	41	...	...
„ 4	4	20	36	...	...
Johnstone St. (W.W.)	0	33	27	1	No	
Lune Street 1.....	8 $\frac{1}{2}$	30 $\frac{1}{2}$	21	1	No	Improvements made Notice served
„ 2.....	1 $\frac{1}{2}$	30 $\frac{1}{2}$	28	...	...
Limbrick	2	22	36	1	No	
Lambeth Street (R.W.)	...	11	49	1	No	
Lower Darwen	1 $\frac{1}{2}$	25 $\frac{1}{2}$	33	1	No	Improvements made Notice served
Mosley Street	4	16	40	1	Yes	
Moss Street	0	27	33	2	No	
Moorgate (H.W.) 1...	2	37	21	1	No	
„ 2 ..	0	25	35	Improvements made Notice served
„ 3...	1	38	21	...	...
Moorgate 1	1	37	22	2	No	
„ 2.....	1	28	31	...	...
„ 3.....	2	23	35	

SMOKE OBSERVATIONS continued.

Name of Mill.	Result of Observation			No. of Boilers	If Stokers.	Action taken.
	B.	F.	N.			
Monk St. (T.W.) 1...	$\frac{1}{2}$	20 $\frac{1}{2}$	39	1	No	Notice served
„ „ 2...	3	14	43	..	..
Novas Scotia 1.....	9	11	40	2	No	
„ 2.....	1	14	45	..	..
Northgate Rope W'ks.	0	10	50	1	No	
Navigation 1.....	0	44	16	4	No	Yes
„ 2.....	7	32 $\frac{1}{2}$	20 $\frac{1}{2}$	..	..
„ 3.....	4	30 $\frac{1}{2}$	25 $\frac{1}{2}$	..	..
Ordance 1.....	0	34	26	3	Yes	
„ 2.....	0	30	30	..	..
„ 3.....	0	35	25	No
Oozebooth	1	25	34	1	No	
Pioneer 1.....	0	25	35	1	Yes	
„ 2.....	0	29	31	..	..
„ 3.....	0	21	39	..	..
Park Bridge	0	10	50	1	Yes	Yes
Paradise 1.....	$\frac{1}{2}$	13 $\frac{1}{2}$	46	3	Yes	
„ 2.....	2	18	40	..	..
„ 3.....	1 $\frac{1}{2}$	16 $\frac{1}{2}$	42	..	..
„ 4.....	2 $\frac{1}{2}$	16 $\frac{1}{2}$	41	..	..
Primrose.....	0	32	28	2	Yes	No
Paterson Street 1.....	3	8	49	1	No	
„ 2.....	0	15	45	..	..
Parkside 1.....	5	29	26	1	No	
„ 2.....	1	26	33	..	..
„ 3.....	2	21	37	No
Phoenix	0	16	44	1	No	
Pump Street	0	38	22	1	No	
Phoenix (F) 1.....	0	29	31	1	No	
„ 2.....	0	36	24	..	..
Plantation	0	34	26	2	No	No
Prospect 1.....	2 $\frac{1}{2}$	20 $\frac{1}{2}$	37	1	No	
„ 2.....	2 $\frac{1}{2}$	25 $\frac{1}{2}$	32	..	..
„ 3.....	2 $\frac{1}{2}$	13 $\frac{1}{2}$	44	..	..
Queen's Park 1.....	1	15	44	1	No	
„ 2.....	2	22	36	No
Quarry Street 1.....	0	40 $\frac{1}{2}$	19 $\frac{1}{2}$	3	No	
„ 2.....	$\frac{1}{2}$	29 $\frac{1}{2}$	30	..	..
„ 3.....	1 $\frac{1}{2}$	30 $\frac{1}{2}$	28	..	..
Randal St. (H.W.) ...	0	29	31	1	No	

SMOKE OBSERVATIONS—continued.

Name of Mill.	Result of Observation.			No. of Boilers.	If Stokers.	Action taken.
	B.	F.	N.			
Rosehill 1	2½	12½	45	2	No	
„ 2	5	14	41	...	...
Rosehill Laundry 1 ..	1½	13½	45	1	No	
„ „ 2 ..	1	13	46	...	...
Royshaw 1	6	19	35	1	No	Prelim. notice
„ 2... ..	2	31	27	...	...
Royshaw (B.W.)	0	28	32	1	No	
Roe Lee (No. 1).....	5½	37½	17	2	No	Prelim. notice
„ (No. 2).....	0	18	42	1	Yes	
Salford (N.B.).....	2½	10	47½	1	Yes	
Salford (B.).....	0	24	36	2	No	
Salisbury St.	½	46½	13	1	Yes	
Scotshaw Brook	0	32	28	...	...
Stanley Street 1	1½	20½	38	3	No	
„ 2.....	3	32	25	...	...
Springfield 1	0	52	8	8	Yes	
„ 2	6½	46½	7	...	...
Shakespeare 1.....	6½	17½	36	2	Yes	Notice served
„ 2	1½	26½	32	...	...
Snigbrook (B.)	18½	21½	20	1	No	Notice served
Thornber St. (I.W.) ...	0	31	29	1	No	
Turner Street 1.....	1	31	28	1	No	
„ 2.....	0	28	32	...	...
Unity	0	20	40	1	Yes	
Union Buildings (S.W)	1	14	45	1	No	
Victoria (W.F.).....	1	34	25	1	No	
Victoria 1	2	9	49	1	Yes	
„ 2 .. .	3	31	26	...	...
„ 3	0	7	53	...	...
Victoria (H.S.)	2	23	35	3	No	
Wellington (No. 1) 1...	2	14	44	3	No	
„ „ 2...	0	14	46	...	...
„ „ 3...	3	18	39	...	...
Wellington (No. 2) 1...	0	14	46	3	No	
„ „ 2...	0	23	37	...	...
„ „ 3...	3	15	42	...	...
Whalley Banks.....	1	18	41	1	Yes	
William Hopwood Street (H.W.)	1½	23½	35	1	No	

SMOKE OBSERVATIONS—continued.

Name of Mill.	Result of Observation			Nc. of Boilers.	If Stokers.	Action taken.
	B.	F.	N.			
Whitebirk Brick W'ks	2	14	44	1	No	
„ Bleach „	2 $\frac{1}{2}$	12 $\frac{1}{2}$	45	1	No	
Wellfield.....	1 $\frac{1}{2}$	15	43 $\frac{1}{2}$	1	No	
Ward Street ..	2 $\frac{1}{2}$	32	25 $\frac{1}{2}$	2	Yes	
Waterloo 1.....	2	36	22	1	No	
„ 2.....	1	35	24	...	...
„ 3.....	2	34	24	...	...
Wensley Fold 1.....	5	32	23	1	No	Notice served
„ 2	9 $\frac{1}{2}$	31 $\frac{1}{2}$	19	...	...	Improvements made
Wensley Fold (New) 1	0	35	25	1	Yes	
„ „ 2	0	33	27	...	...

DISINFECTION.

Eight hundred and ninety-one rooms at 741 houses have been disinfected after cases of Infectious Diseases, 704 being washed down with chloros and 187 fumigated with formalin gas.

At two schools 11 rooms have been sprayed with disinfectants after outbreaks of Diphtheria and Scarlet Fever.

Various rooms at the Fever Hospital have been washed down with Chloros, on 26 occasions.

One thousand four hundred and ninety-one visits to infected houses were made for the purpose of supplying disinfectants, and 194 typhoid pails, from patients isolated at home, were collected and their contents burnt at the destructor.

The following articles have been disinfected by steam :—

1,101	beds.
1,128	mattresses.
959	bolsters.
1,444	pillows.
1,588	quilts.
1,394	blankets.
946	sheets.
1,413	suits of clothes.
493	carpets.
266	rugs.
769	curtains.
4,410	sundries.

The following articles have been removed to the destructor and destroyed by consent of the owners :—

67 mattresses, 29 beds, 9 pillows, 9 bolsters, 9 suits of clothes, 5 blankets, 4 quilts, 5 sheets, 2 carpets, and 11 sundries.

83 Library and other books have been fumigated during the year.

TABLE XC.

DESCRIPTION OF VISITS.

District—	1	2	3	4	TOTAL.
Visits to Common Lodging Houses	51	235	93	606	985
Houses let in Lodgings ...	824	449	274	1047	2594
Common Yards, Back Roads and Passages ..	3609	1536	1629	3279	10053
Infected Houses	478	453	610	210	1751
Work in Progress	505	973	437	645	2560
Dwelling-houses inspected	3071	1504	1222	1269	7066
Horse-Manure Middens	775	504	445	572	2296
Cowsheds	30	41	30	39	140
Dairies	23	34	23	32	112
Chip Potato Shops	892	48	253	235	1428
Fish and Greengrocers Shops	1092	48	306	473	1919
Ice Cream Shops	13	...	28	6	47
School Inspection .....	...	22	28	...	50
Nuisances Investigated ..	85	151	141	70	447
Smoke Observations ..	78	64	60	51	253
Miscellaneous Visits.....	40	97	58	103	298
Special visits <i>re</i> Housing	414	353	310	440	1517

TABLE XCI.

DESCRIPTION OF NOTICES ISSUED AND NUISANCES
REMEDIED.

District—	1	2	3	4	Total.
Preliminary Notices served	280	380	280	332	1272
Legal " "	42	90	20	62	214
Nuisances remedied from—					
Defective Drains	51	14	17	29	111
Choked "	53	56	49	24	182
Defective Water Closets	45	26	15	32	118
„ Pail „	43	16	5	2	66
„ Slop Water Closets	13	4	6	7	30
„ Trap Gullies.....	11	10	4	5	30
„ Sink Waste Pipes	73	50	26	14	163
„ W.C. Cisterns and Flushing Fittings	40	49	20	20	129
„ Easing Troughs	58	26	29	59	172
„ Urinals	3				3
„ Dishstones re-set.....	14	14	16	4	48
Improper Drainage	65	63	65	68	261
Yards unflagged	19	52	32	12	115
Yards badly paved.....	76	24	14	15	129
Houses, Yards and Cellar Areas dirty	26	36	23	68	153
Damp and defective house walls	19	15	21	19	74
Insufficient Ventilation of Rooms .....	...	5	1	...	6
Defective Manure Middensteads.....	4	3	1	...	8
Accumulation of Manure	775	522	445	555	2297
„ Offensive Matter	4	27	3	5	39
„ Stagnant Water		3	...	...	3
Dwelling-houses whitewashed.....	108	84	113	225	530
Erections and Poultry removed.....	4	8	14	5	31
Ash Tubs repaired or provided	108	31	62	100	303
Ash Pits and Pail Receptacles repaired.....	5	29	16	20	70
Street Gullies, and Ashpits reported to Cleansing Department.....	175	157	12	19	363

WORK VISITED AND ORDERED BY THE HEALTH SUB-COMMITTEE.

Offensive trade premises for registration	2
Uneven or unpaved yards	50
Uneven or unpaved passages	3
Conversion of privies	99
Rescission orders	6
Houses closed as unfit for habitation	18
Houses to be altered or closed	10
Houses to be demolished	2
Cowsheds and dairies visited	18

I am, Sir,

Yours obediently,

JAMES GRAHAM, Cert., R.S.I.,

Chief Sanitary Inspector.

SALE OF FOOD AND DRUGS ACT.

The following circular-letter was received from the Local Government Board during the year, respecting the Sale of Food and Drugs Acts :—

LOCAL GOVERNMENT BOARD.

Whitehall, S.W.,

8th December, 1908.

Analysts' Reports.

Sir,

I am directed by the Local Government Board to call your attention to Section 19 of the Sale of Food and Drugs Act, 1875, and to remind you that a copy of the reports made by the public analyst for the several quarters of the year 1908 should be forwarded to the Board in the course of the month of January, 1909, so far as the same have not already been transmitted. Many local authorities have adopted the suggestion that a copy of each quarterly report should be sent to the Board as soon as possible

after its submission to the local authority ; and the Board would be glad if, in future, the plan were adopted in all cases. All reports should be *certified* as required by the section.

Summary of Reports.

The Board would also be glad to receive with the Report for the last quarter of 1908 a summary for the year showing how many samples of each article were analysed during the year, and how many were reported against by the analyst.

Informal Samples.

Samples collected without the formalities prescribed by the Sale of Food and Drugs Acts and sent to the public analyst should be included in the quarterly reports and separately distinguished. If during 1908 any such samples have been examined by the public analyst, and have not been included in his quarterly reports, a statement regarding their nature and the result of their examination should be furnished. If, with a view to preliminary investigation, any informal samples have been collected and dealt with otherwise than by submission to the public analyst, the Board would be obliged if you would forward to them a short statement of the procedure adopted in such cases.

The Board will also be glad to receive observations by the public analyst, or by the medical officer of health or other officer charged with the direction of sampling under the Acts, regarding the practice of examining informal samples, and the use made by the local authority of the information thus obtained.

Results of Prosecutions.

The Board desire to be furnished with a statement of the cases in which legal proceedings have been taken with regard to samples reported against, of the result of such proceedings, and of the respective amounts of the fines inflicted and the costs paid, showing the fines and costs separately. It would greatly facili-

tate the Board's work if the reports, as at first sent in, are made complete in these particulars. In many cases, information is given only with regard to *successful* prosecutions. What the Board desire to receive is information respecting every case in which a sample is adversely reported upon by the public analyst. The report should show as briefly as convenient in all these cases the precise action which has been taken by the local authority. If legal proceedings have been taken, the result should be stated. The information should also include the result of proceedings instituted under the Margarine Act, 1887, and of proceedings (if any) in respect of other offences than adulteration; *e.g.*, "Obstructing an officer in the discharge of his duty," "Refusing to sell," etc. Where proceedings are pending at the time of sending the reports to the Board, the Board would be glad to receive as early as practicable the necessary information as to the result of such proceedings.

Form of Analyst's Quarterly Report.

The system of reporting under "groups" referred to in previous circulars has been adopted by an increasing number of analysts, and the Board trust that the system will be adopted generally.

Information as to Declarations, Mixtures, Etc.

The Board have been informed that in some districts sampling officers transmit samples to the analyst for analysis without furnishing information as to the circumstances in which the samples are taken, with the result in some cases that the analyst is unable to grant a proper certificate in accordance with the facts. Reports have been received by the Board in which articles sold as mixtures (*e.g.*, coffee and chicory) have been reported against merely because they were mixtures—the analyst not having been informed that the articles were sold as such. The Board are of opinion that analysts should be informed of any statement made by the vendor at the time of sale which bears on the quality of the article, and that his attention should be drawn to any such statements or declarations on labels, packages, tins, bottles, or wrapping paper.

Annual or Special Reports.

The Board would in future be glad to receive, at an early date after they are available, copies of any annual or special reports made by public analysts which contain observations on particular adulterations of articles of food or drugs, or on the nature of samples which, for the purposes of the Acts, have been reported as "genuine," or deal with the general working and administration of the Sale of Food and Drugs Acts in their districts. The Board would also be glad to receive a copy of any reports on like matters which may be made by other officers of the authority.

Remuneration of Analyst.

Section 19 of the Act of 1875 requires the analyst to state in his quarterly report the sum paid in respect of each analysis. The required information may be given either at the beginning or at the end of each quarterly report, and it should include a note of the sum charged in respect of any analysis made by the analyst in his public capacity for private individuals or bodies.

Two additional copies of this circular are enclosed for transmission respectively to the public analyst and to the medical officer of health or other officer charged with the direction of sampling under the Acts.

I am, Sir,

Your obedient Servant,

JOHN LITHIBY.

During 1908, 287 Samples were purchased in Blackburn in the administration of the Food and Drugs Act, of which 156 were samples of milk. Of the total number of samples taken, 264 were found on analysis to be genuine. As in previous years, many unofficial samples were purchased, and if any of these were found to be adulterated, other samples were then taken officially from the same vendors.

TABLE XCII.

Population and Death-rates of the various Sub-Districts and constituent Enumeration Districts (as extended in 1901) for the year 1908 :—

NORTHERN.

Enumeration District.	Population at 1901 Census.	Death-rate for 1908.
No. 1	1,011	10.8
2	1,020	10.7
3	583	18.8
4	1,322	6.8
5	1,191	15.1
6	872	22.9
7	729	10.9
8	1,131	14.1
9	565	17.7
10	869	12.6
11	1,205	24.8
12	1,148	17.4
13	929	20.4
14	1,166	27.4
15	1,049	16.2
16	1,227	15.4
17	1,076	14.8
18	741	17.5
19	847	20.0
20	1,011	12.8
21	007	11.0
22	1,152	13.8
23	1,011	9.0
24	967	7.2
25	1,126	23.9
26	1,146	11.3
27	839	26.2

Enumeration District.	Population at 1901 Census.	Death-rate for 1908
28	1,414	24.0
29	995	20.1
30	1,133	26.4
31	1,227	28.5
32	1,098	29.1
33	620	17.7
34	873	14.8
35	1,051	12.3
36	859	26.7
37	936	11.7
38	1,177	11.8
39	908	6.6
40	1,223	16.3
41	1,055	20.8
42	793	13.8
43	474	21.0
44	1,019	14.7
45	1,240	12.0
46	859	29.1
47	1,024	9.7
48	1,278	22.6
49	1,592	15.7
50	946	6.3
51	946	17.9
52	1,306	13.7
53	1,436	25.7
54	1,322	24.9
55	1,098	20.9
56	1,191	14.2
57	1,343	11.9
58	1,283	7.7
59	1,009	15.8
60	1,004	16.9

SOUTHERN.

Enumeration District.	Population at 1901 Census.	Death-rate for 1908.
No. *1	636	73.9
2	584	63.3
3	631	11.0
4	1,028	15.5
5	743	20.1
6	597	6.7
7	399	7.5
8	755	17.2
9	557	19.7
10	816	18.3
11	1,137	20.2
12	1,213	9.8
13	870	13.7
14	1,072	17.7
15	720	19.4
16	799	17.5
17	1,454	13.7
18	1,215	16.4
19	1,317	8.3
20	611	24.5
21	1,438	25.7
22	1,016	16.7
23	1,346	13.3
24	1,294	8.5
25	2,369	11.3
26	775	21.8
†27	1,118	15.2

* The large Common Lodging-house in Larkhill-street is situated in this district, and has accommodation for about 320 lodgers. During the year 10 deaths occurred belonging to this Lodging-house, and this accounts for the high death-rate in this District.

† The Union Workhouse is situated in this District, and during the year seven deaths occurred of persons whose address previous to admission could not be ascertained.

Enumeration District.	Population at 1901 Census.	Death-rate for 1908.
28	955	10.4
29	923	8.6
30	1,299	10.0
31	615	26.0
32	690	26.0
33	655	19.8
34	909	11.0
35	1,129	18.6
36	646	17.0
37	970	25.7
38	1,120	15.1
39	458	10.9
40	472	31.7
41	830	20.4
42	465	25.8
43	1,277	16.4
44	1,461	22.5
45	980	17.3
46	1,039	9.6
47	1,131	21.2
48	1,023	14.6
49	605	16.5

WITTON AND LIVESEY.

No. 1	1,240	16.1
2	1,197	15.0
3	1,076	22.3
4	953	23.0
5	1,043	8.6
6	958	13.5
7	1,036	17.3
8	1,190	13.4
9	1,115	18.8
10	1,301	9.2
11	820	12.1
12	827	20.5

Enumeration District.		Population at 1901 Census.		Death-rate for 1908.
	13	891	.....	15.7
	14	892	.....	15.6
	15	989	.....	13.1
	16	932	.....	8.5
	17	735	.....	21.7
	18	1,056	.....	11.3
Part of	19	144	.....	13.8
„	20	196	.....	15.3
„	24	194	.....	10.3

Causes of Death in the County Borough of Blackburn during the Year 1908.
ESTIMATED POPULATION TO THE MIDDLE OF 1908, 135,278.

AGES.

[illegible]

AGES.

CAUSE OF DEATH.

CAUSE OF DEATH.	AGES.										All Ages.		Total			
	0 to 1	1 to 5	5 to 10	10 to 15	15 to 20	20 to 25	25 to 35	35 to 45	45 to 55	55 to 65	65 to 75	75 to 85		85 and upwds	M	F
60 Dentition	2	4	..	..	..	..	..	..	..	..	..	..	..	3	3	6
61 Rickets	2	6	..	..	..	..	..	1	..	..	..	..	..	5	4	9
62 Old Age, Senile Decay	2	49	71	..	..	61	80	141
63 Convulsions	27	3	1	..	..	..	..	..	..	..	..	..	..	10	21	31
64 Meningitis	10	8	3	1	1	2	..	3	..	..	..	..	..	20	7	27
65 Encephalitis	1	1
66 Apoplexy, Cerebral Hæmorrhage	2	..	..	..	..	..	4	23	20	35	11	5	..	49	61	110
67 Softening of Brain	1	3	2	5	1	..	..	7	8	15
68 Hemiplegia, Brain Paralysis	1	..	..	..	5	2	7	2	..	..	10	12	22
69 General Paralysis of Insane	2	4	1	1	..	..	..	2	5	7
70 Other Forms of Insanity	1	..	..	..	..	..	1	1
71 Chorea	1	..	..	..	..	..	..	..	..	..	..	..	..	1	1
72 Cerebral Tumour	1	1	..	..	3	..	1	..	..	..	..	1	1
73 Epilepsy	2	1	2	1	..	..	..	..	..	..	3	4	6
74 Laryngismus Stridulus	7
75 Locomotor Ataxy	1	1	..	..	3	..	..	..	2	..	2
76 Paraplegia, Diseases of Spinal Cord	1	..	..	..	..	..	1	1	3	..	..	..	2	5	7
77 Other and ill-defined { Paralysis Agitans Diseases of Brain { Infantile Paralysis or Nervous System { Multiple Neuritis Peripheral Neuritis	1	..	..	..	..	1	1
78 Otitis, Otorrhœa	1	..	..	..	..	..	1	..	..	..	..	..	1	1	2
79 Diseases of Nose, Epistaxis
80 Diseases of Eye, Ophthalmia
81 Pericarditis	1	..	..	..	..	1	..	..	..	..	..	..	..	2	2
82 Endocarditis, Valvular Diseases of the Heart	3	8	12	10	13	3	..	..	30	38	68
83 Hypertrophy of Heart	1	2	4	3	5	..	..	..	..	..	..	..	..	..	..
84 Angina Pectoris	1	1
85 Aneurism	1	1	..	..	..	..	..	5
86 Senile Gangrene	1	1	..	..	..	..	1	2
87 Embolism, Thrombosis	1	1	4	..	..	2	1	6
88 Phlebitis	1	2	..	..	..	5	1	6
89 Varicose Veins	1	2	..	..	..	4	1	5
90 Other and ill-defined { Fatty Degeneration. Diseases of Heart { Cardiac Dilatation and Circulatory { Atheroma System { Heart Disease undefined	1	..	1	..	..	..	1	6	8
	1	1	..	..	..	2	3	5
	3	..	2	..	..	3	3	12	14	9	18	5	2	30	42	72

[illegible]

